WILDFIRE NATURAL EVENTS ACTION PLAN

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INTRODUCTION

The purpose of the Idaho Wildfire Natural Events Action Plan (NEAP) is to protect public health in Idaho during natural wildfire events and fulfill the requirements of the EPA's Natural Events Policy (EPA, 1996). Development of this NEAP was prompted by violation of the PM_{10} National Ambient Air Quality Standards (NAAQS) in Salmon, Idaho, during the natural wildfire event of 2000. While the majority of the smoke impacts occurred in central Idaho, this NEAP applies statewide since smoke impacts could potentially occur anywhere within the state.

As required by the Natural Events Policy (NEP), the NEAP must contain the following plan elements:

1. Public Notification and Education Programs
2. Minimize Public Exposure
3. Abate or Minimize Controllable Sources
4. Identification, Study, and Implementation Mitigation Measures
5. Periodic Evaluation

BACKGROUND

This section describes the regulatory framework, health effects of smoke, and the role of fire.

National Ambient Air Quality Standards (NAAQS)

The EPA establishes the NAAQS to protect human health and welfare. These standards exist for the following six air pollutants: carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, lead, and particulate matter. An area that violates any of the standards is designated as "nonattainment" for the specific NAAQS.

Particulate matter (PM) is the pollutant of most concern for smoke emissions. There are two NAAQS for PM—PM_{10} and $PM_{2.5}$. The PM_{10} NAAQS were promulgated by the EPA in 1987. PM_{10} stands for PM less than 10 micrometers in aerodynamic diameter (equivalent to 1/25,000 of an inch). The annual standard is 50 $\mu g/m^3$ and the 24-hour standard is 150 $\mu g/m^3$. The EPA promulgated the $PM_{2.5}$ NAAQS in July 1997. $PM_{2.5}$ stands for PM less than 2.5 micrometers in aerodynamic diameter. The annual standard is 15 $\mu g/m^3$ and the 24-hour standard is 65 $\mu g/m^3$. Attainment designations for the $PM_{2.5}$ NAAQS may begin as early as 2002.

Once an area has been designated as nonattainment, DEQ must prepare an attainment plan to meet the NAAQS by EPA-specified deadlines. An attainment plan can take several years to complete and generally includes: background information, air quality and meteorological assessments, emissions inventories, control measures, modeled attainment demonstrations, and contingency measures for the specific nonattainment area. The state of Idaho currently has three PM_{10} nonattainment areas: Portneuf Valley (Pocatello area), Pinehurst, and Sandpoint. In addition, a portion of Kootenai County (Coeur d'Alene area) is a proposed PM_{10} nonattainment area and Fort Hall Indian Reservation is a Tribal/EPA PM_{10} nonattainment area. Violations are primarily due to exceeding the 24-hour standard during winter months when strong inversions trap pollutants.

The attainment plans become part of the State Implementation Plan (SIP). The SIP includes information on DEQ's general authority to regulate air quality, stationary source permitting, compliance, enforcement, and monitoring programs, nonattainment area plans, rules, statewide emissions inventory, and air stagnation advisories.

Natural Events Policy

The EPA issued the Natural Events Policy (NEP) to address PM_{10} NAAQS violations caused by natural wildfire, volcanic and seismic activity, or high wind events (see **Appendix A**). At this time, the policy only addresses PM_{10}; however, the EPA plans to revise the policy within the next few years to include $PM_{2.5}$. In the NEP, the EPA acknowledges that control of smoke emissions during major wildfire events can be limited. The EPA also recognizes that smoke from wildfires can be a major source of particulate matter.

Under the NEP, when the NAAQS violation is due to a natural event, it is at the EPA's discretion whether to designate areas as nonattainment. To avoid a nonattainment designation in these instances, the responsible agency (DEQ) must develop a Natural Events Action Plan (NEAP). The EPA recognizes that nonattainment designation for areas impacted by uncontrollable natural wildfire events would result in unreasonable planning requirements on traditional sources, i.e., power plants and vehicles. Therefore, the NEAP provides reasonable actions to address air quality and public health impacts caused by natural events.

DEQ has the primary responsibility for determining if a natural event has occurred, for flagging and documenting exceedances, and for developing, implementing, and reevaluating a NEAP. EPA's responsibility is to review and comment on the NEAP rather than to approve or disapprove. EPA's primary responsibility is to ensure states develop and implement a NEAP. EPA is also responsible for reviewing documentation of events to ensure a reasonable case has been made that the event occurred. Should NAAQS exceedences due to a natural wildfire event occur again in the future, the event will be documented and the NEAP may be revised if needed. A new NEAP would not be required. The NEAP may be, but is not required to be, adopted as revisions to the SIP (see **Appendix A**). The NEAP will be submitted to the EPA for review and comment as required by the NEP, but it will not be adopted as a revision to the Idaho SIP. The NEAP must be reviewed every five years at a minimum.

The NEP does not cover wildland fires or prescribed fires that are managed for resource benefits, nor when these same fires, upon escape, are converted to wildfires. These fires are covered under the EPA's Interim Air Quality Policy on Wildland and Prescribed Fires (EPA, 1998).

Health Effects of Smoke

Smoke is composed of particulate matter, gases, and water vapor. One of the biggest health concerns of smoke comes from particulate matter. Smoke particles are primarily $PM_{2.5}$. Particles can build up in the respiratory system, causing a number of health problems, including burning eyes, runny noses, and illnesses such as bronchitis. Particles can also aggravate existing heart and lung diseases, such as congestive heart failure, chronic obstructive pulmonary disease, emphysema, and asthma.

Not everyone who is exposed to smoke will have health problems. Smoke-related health problems will depend on the level of exposure, individual age and susceptibility, and other factors. Healthy individuals will normally recover quickly from smoke exposure and not suffer long-term consequences. However, certain sensitive populations may experience more severe acute and chronic symptoms from smoke exposure. Much of the information about how particulate matter affects these groups originates from studies conducted in cities with a mix of pollution sources. A few studies on wildfire smoke exposure suggest the health effects may be similar, but more research is needed. The following discussion on smoke effects on sensitive populations is from "Wildfire Smoke: A Guide for Public Health Officials" (2002).

Individuals with Asthma and Other Respiratory Diseases

Levels of pollutants that may not affect healthy people, may cause breathing difficulties for people with asthma or other chronic lung diseases. Asthma, derived from the Greek word for panting, is a condition characterized by chronic inflammation of the airways, with intermittent bronchoconstriction and airflow obstruction, causing shortness of breath, wheezing, chest tightness, coughing, and sometimes accompanied by excess phlegm production. During an asthma attack, the muscles tighten around the airways and the lining of the airways becomes inflamed and swollen, constricting the free flow of air. Irritation creating minor problems for an adult may result in significant obstruction in the narrower airways of a young child. However, the highest mortality rates from asthma occur among older adults.
Individuals with chronic obstructive pulmonary disease (COPD), which is generally considered to encompass emphysema and chronic bronchitis, may also experience a worsening of their conditions because of exposure to wildfire smoke. Often COPD patients have an asthmatic component to their condition, which may result in their experiencing asthma-like symptoms. However, because their pulmonary reserve typically has been seriously compromised, additional bronchoconstriction may result in symptoms requiring medical attention. Epidemiological studies have indicated that individuals with COPD run an increased risk of requiring emergency medical care after exposure to particulate matter or forest fire smoke. Exposure to smoke may also depress the ability to fight lung infection. People with COPD may develop lower respiratory infections after exposure to wildfire smoke, which may require urgent medical care as well. In addition, because COPD is usually the result of many years of smoking, individuals with this condition may also have heart disease, and are potentially at risk from both conditions.

Individuals with Cardiovascular Disease

Diseases of the circulatory system include, among others: high blood pressure, cardiovascular diseases (such as hardening of the arteries, coronary artery disease, and congestive heart failure), and cerebrovascular conditions (such as atherosclerosis). These chronic conditions can render individuals susceptible to angina pectoris attack, heart attack, sudden death by cardiac arrhythmia, acute congestive heart failure, or stroke. Cardiovascular diseases represent the leading cause of death in the United States, responsible for about 40 percent of all deaths each year. The vast majority of these deaths are in people over 65. Studies have linked particulate pollution to increased risk of heart attack, cardiac arrhythmia, and other adverse conditions in those with cardiovascular disease. People with chronic lung or heart disease may experience one or more of the following symptoms: shortness of breath; chest tightness; chest, neck, shoulder, or arm pain; palpitations; unusual fatigue; and lightheadedness. Chemical messengers released because of particle-related lung inflammation may increase the risk of blood clots, angina episodes, heart attacks, and strokes.

Elders

In several studies, researchers have estimated that tens of thousands of elderly people die prematurely each year from exposure to particulate pollution. This is probably because the elderly are more likely to have pre-existing lung and heart diseases; therefore, are more susceptible to particle-associated effects. The elderly also seem to be more affected because

important respiratory defense mechanisms may decline with age. Particulate pollution can compromise the immune system, increasing susceptibility to bacterial or viral respiratory infections.

Children

All children, even healthy children, are considered a sensitive population because their lungs are still developing. Several factors lead to increased exposure in children:

- More time outside
- More vigorous activity
- More air is inhaled (and therefore more particles) per pound of body weight

Studies have shown that particulate pollution is associated with increased respiratory symptoms and decreased lung function in children, such as coughing and difficulty breathing. These can result in school absences and limitations on normal childhood activities.

Smokers

Smokers, especially long-term smokers, have already compromised their lung function. Because their lungs have adapted to ongoing irritation, smokers are less likely to report symptoms from exposure to irritant chemicals. However, their lungs may still be injured by wildfire smoke. Therefore, some smokers may unwittingly put themselves at greater risk of potentially harmful wildfire smoke exposure, believing that they are not being affected.

Fire History and Ecology

Wildland fire, along with climate and topography, have been important in shaping ecosystems (forest, woodland, shrubland, and grassland) in the Western United States (Crane and Fischer, 1986; Wellner, 1970). Before settlement, fire was much more common over much of Idaho. Some areas burned as frequently as every five to 15 years while in other areas fire was much less frequent, occurring only every 200 years or longer (www.fs.fed.us/fire/fuelman/). Much of the state however burned as often as every 35 to 100 years. The effects of these fires varied depending on the vegetative communities in which they occurred. In some communities, particularly those with "fire resistant" vegetation, the fires were primarily non-lethal, resulting in little change to the community. Fire was stand-replacing (lethal) in other vegetative types, resulting in more dramatic changes immediately after the fire. Studies by Wellner (1970) and Hockaday (unpublished, 1968) indicate fires may result after extended periods of dry weather conditions and insect epidemics that kill large numbers of trees. The presence of many plants in Idaho, including lodgepole pine, snowbrush ceanothus, western whitepine, and ponderosa pine, for example, is strongly related to fire history in Idaho (Bradley et al., 1992; Crane and Fischer, 1986; Smith and Fischer, 1997). Recognition and documentation of the importance of fire for perpetuation of natural forest ecosystems and landscape diversity is steadily increasing (Arno, 1980; Habeck and Mutch, 1973; Romme, 1982; Wellner, 1970a).

There appears to be a trend for fires to occur more often in some areas than others, with about 89 percent of lightning fires in the Northern Region occurring west of the Continental Divide. This is in part due to the various climatic regimes that influence weather in Idaho. Northern and portions of western Idaho are influenced by maritime weather that flows in from the Pacific. During the summer, the maritime influence diminishes producing extended dry periods. Occasional unstable air moving over the region often produces dry lightning, or lightning in combination with short duration, high intensity rainstorms. Eastern portions of the state are influenced primarily by the continental climate regime. In the early summer, these areas receive rain from monsoonal weather that flows up from the southwest. While these events can produce lightning, they often occur with more extended rainfall events than those produced by weather farther north.

Human ignitions (planned or otherwise) have also been important in shaping ecosystems in the Western United States. The studies of Barrett and Arno (1982) emphasize the extensive impact Native American burning had on maintaining vegetative structure and composition. In addition, prospectors, early settlers, and farmers burned to clear land for human and economic development. As human populations, outdoor recreation, and job opportunities increase, so do human-caused fires.

Early land management practices focused on fire suppression. This fire exclusion dramatically impacted ecosystems, particularly areas adapted to frequent fires. In many areas, fire return intervals have been lengthened, resulting in changes in species composition, stand structure, and fuel loadings. Currently, fires in these once non-lethal vegetative communities can be difficult and dangerous to suppress, sometimes resulting in large, stand-replacing events. In other areas, fire intervals have been increased due to changes in vegetative composition from intentionally or unintentionally introduced non-native plants. Much of the sage-grass area adjacent to the Snake River in southern Idaho has been, or is at risk to, invasion by cheatgrass, an introduced annual. Cheatgrass cures early in the summer, and burns readily, resulting in fires that spread quickly. It immediately re-establishes and can burn each year. Changing elements such as species composition, structure, fuel type and fuel loading, has increased fire hazard in many areas. Currently conditions are such that many landscapes are at risk to future large wildfires.

2000 NATURAL WILDFIRE EVENT

The 2000 wildfire season was one of the largest since 1960, burning 1.3 million acres in Idaho and close to 7 million acres nationwide. The first large smoke intrusions in Idaho occurred in Boise and Salmon on July 15-16. Large smoke intrusions occurred again July 28 in Pocatello and July 29-31 in Salmon. In August, Salmon and other parts of central Idaho continued to see large smoke intrusions. The communities of Challis, Elk City, Grangeville, Leadore, Lewiston, McCall, North Fork, Riggins, Salmon, and Whitebird were the most impacted by heavy smoke intrusions. Hazardous air quality conditions were estimated on several days for Challis, North Fork, and Salmon. From August 18 to September 8, the Steel Memorial Clinic in Salmon reported 54 cases of upper respiratory symptoms potentially associated with smoke exposure.

PM_{10} NAAQS Excursion Summary

There were 11 excursions of the 24-hour PM_{10} NAAQS measured at the Salmon School District Warehouse site. With an additional 7 excursions measured at the Salmon BLM site, there were 14 distinct days for which NAAQS excursions were recorded in Salmon (all in August, except for one in late July). Nine of these excursions were greater than or equal to 200 $\mu g/m^3$ with the highest recorded value being 281 $\mu g/m^3$.

An evaluation of the past five years of PM_{10} data for the Salmon area shows the magnitude and duration of smoke intrusions from the 2000 wildfire event to be very different. The only other time that levels had reached above 100 $\mu g/m^3$ during the summer months was on September 2, 1998, when the 24-hour PM_{10} concentration was 102 $\mu g/m^3$. Upon evaluating the potential reasons for this event, it is believed that a large wildfire 40 miles west/northwest of Salmon may have contributed to this elevated concentration.

Further details on the PM_{10} excursion data can be obtained from the technical support document submitted to the EPA (DEQ, 2001).

Actions Taken

Wildfire activity in Idaho began in earnest with the discovery of the Clear Creek wildfire in the Frank Church River of No Return Wilderness on July 10, 2000. Federal suppression actions were limited due to steep, rocky terrain. On July 14, the Clear Creek wildfire grew from approximately 1,000 acres to 23,000 acres. The Clear Creek wildfire grew to over 200,000 acres by the end of August. This and other wildfires in the area contributed to many smoke intrusions to the nearby towns of Challis, Leodore, North Fork, and Salmon. Wildfire smoke intrusions were also reported for the communities of Elk City, Grangeville, Lewiston, McCall, Pocatello, Riggins, and Whitebird. Overall, the smoke intrusions were most intense in the Salmon area.

By the second smoke intrusion in Salmon at the end of July, DEQ began closely tracking air quality conditions seven days per week. Sample frequency of the PM_{10} high volume filter samplers in Salmon were increased from once every six days to every day. The EPA provided emergency funding to DEQ for the purchase of nine $PM_{2.5}$ Tapered Element Oscillating Microbalance (TEOM) instruments for monitoring smoke events. TEOMs provide $PM_{2.5}$

continuous readings that can be accessed over phone lines (see **Element 2**). In addition, the Salmon-Challis National Forest maintains additional instruments for monitoring smoke trends. DEQ conducted a quality assurance check and audit on the monitors to ensure data quality. For areas that did not have monitors, DEQ used airport visibility data and called on local agencies to provide visual visibility estimates. Concentrations of $PM_{2.5}$ were estimated from these data using an empirical relationship that was developed by the Montana DEQ.

From August 15 through September 8, DEQ provided daily updates to the smoke-affected communities and other agencies. The updates included the number of medical admissions over the past 24-hours, the current air quality conditions, weather and smoke forecasts, and information on any open burning restrictions in effect. Between August 3 and September 5, DEQ issued seven press releases for Air Pollution Emergency Rule, stage one. During an emergency stage one, all open burning is prohibited.

DEQ coordinated daily radio spots in Salmon on air quality conditions and forecasts, which were sponsored by the Idaho Bureau of Disaster Services. A flyer on health categories and cautionary statements was developed by DEQ and distributed to various localities. DEQ worked with the USFS on a smoke and health effects question/answer sheet that was also widely distributed. Air quality data was posted on DEQ's website every morning and updated as needed throughout the day.

DEQ worked with the Department of Health and Welfare's Division of Health and the Idaho Bureau of Disaster Services on a protocol for improving air quality in homes and buildings.

(See **Appendix C**, which includes examples of the documents discussed in this section.)

PLAN ELEMENTS

This section describes the following plan elements as required by the NEP:

1. Public Notification and Education Programs
2. Minimize Public Exposure
3. Abate or Minimize Controllable Sources
4. Identify, Study, and Implement Mitigation Measures
5. Periodic Evaluation

The measures outlined in Elements 1 through 5 will be implemented to prevent and minimize harmful health effects from natural wildfire smoke impacts.

Element 1 - Public Notification and Education Programs

> "Such programs may be designed to educate the public about the short-term and long-term harmful affects that high concentrations of PM-10 could have on their health and inform them that: (a) certain types of natural events affect the air quality of the area periodically, (b) a natural event is imminent, and (c) specific actions are being taken to minimize the health impacts of events." (EPA, 1996)

This section describes the following topics:

- General Public Education Programs
- Fire, Smoke, and Health Workshop
- Planning and Rulemaking Process

General Public Education Programs

General education programs include information on smoke management, regulatory requirements, health effects of smoke, and the benefits of fire as a management tool. Federal and state agencies have many educational programs.

DEQ's website includes information on rules, near real-time air quality data, health information, and links to fire potential assessments and current wildland fire information. DEQ has several brochures related to open burning. Material on open burning, smoke management programs, and air quality is often requested by telephone and website. DEQ participates in pre-season interagency media conferences and issues news releases. News releases are issued for air quality advisories when conditions warrant (see **Element 3**).

The Idaho Department of Lands (IDL) Fire Management Bureau administers the 'Keep Idaho Green' program designed to maintain public awareness of fire risks associated with timber harvesting. In 2001, 204 prevention signs were placed at rest stops, historical sites, and state parks. A three-month advertising campaign ran through the fire season including television, radio, billboards, and newspapers. The http://www.keepidahogreen.org website was upgraded.

Fire, Smoke, and Health Workshop

Responding to a congressional request, the EPA sponsored a 'Fire, Smoke, and Health Workshop' in June 2001. Seventy-five environmental specialists participated, including four from DEQ. The workshop included these topics:

- Research topics and needs for characterizing and managing public exposure
- Available tools for predicting and monitoring smoky conditions
- Advisory guidelines to respond to short-term smoke episodes
- Strategies for effective public communication
- Reference to website: http://www.firesmokehealth.org

Planning and Rulemaking Process

The NEP requires public review of this plan and the technical support document. There will also be public review of any future plan revisions or technical support documents for wildfire natural events.

Formal public review is required when state air agencies develop rules and SIPs. The EPA Interim Air Quality Policy on Wildland and Prescribed Fire (EPA, 1998) directs the state to collaborate with land owners/managers and the public in developing smoke management programs.

Element 2 - Minimize Public Exposure

> "Programs to minimize public exposure should: (a) identify the people most at risk, (b) notify the at-risk population that a natural event is imminent or currently taking place, (c) suggest actions to be taken by the public to minimize their exposure to high concentrations of PM-10, and (d) suggest precautions to take if exposure cannot be avoided." (EPA, 1996)

This section describes the following topics:

- Monitoring
- Air Quality Advisory Program
- Fire and Meteorological Forecasts
- Emergency Assistance
- Health Effects Documents

Monitoring

The Federal Clean Air Act requires states to establish air quality surveillance systems. The Idaho air quality surveillance system consists of a network of monitoring stations measuring ambient concentrations of those criteria pollutants for which standards have been established. The network is operated according to required EPA protocols.

Idaho's most dominant air pollutant is particulate matter. Impacts from residential wood combustion, industrial emissions, automobile exhaust, agricultural activities, fugitive road dust, open burning, and factors such as winter temperature inversions affect ambient concentrations. As a result, the majority of Idaho's criteria pollutant monitoring network is measuring particulate matter. (See **Appendix B** for a map of the DEQ air monitoring network.)

Particulate matter is monitored in two size classes, PM_{10} and $PM_{2.5}$. Idaho uses two types of monitors, filter-based and real-time. The filter-based monitors are referred to as high-volume samplers (Hi-Vol). Filters are manually loaded before and collected after each 24-hour period. The Hi-Vol draws air through a filter, and concentrations are calculated from the measured mass retained on the filter and the volume of air sampled. Typically, the data is not available for several months after the sample date. The samplers are operated on schedules of 1:1 (every day), 1:3 (every third day), and 1:6 (every sixth day). Sampling schedules are based on data needs and resource availability. Data needs are often determined by an area's potential for exceeding the NAAQS; elevated concentrations would warrant higher sampling frequencies. During events such as wildfires, a schedule of 1:6 may be increased to 1:3 or 1:1 for the duration of the event.

Real-time monitors provide continuous readings via phone lines. Real-time monitoring data is most useful for managing smoke during fires, especially the $PM_{2.5}$ TEOMs since the majority of smoke is in the $PM_{2.5}$ size range. Real-time data provides information on trends and current air quality conditions that can be used for decision-making and issuing public advisories. Idaho primarily uses TEOM samplers for real-time particulate matter concentrations. These monitors measure actual particulate matter mass.

Idaho also uses some special purpose nephelometers. These are real-time, optically based monitors from which estimates of particulate matter can be calculated. Except under conditions of high relative humidity, these monitors are most useful for estimating $PM_{2.5}$. Optically based instruments need to be collocated with actual mass samplers for one year at the specific location to develop statistically valid relationships (i.e. correlations). Several nephelometers are used during late summer on the Rathdrum Prairie for scheduling field burning. A nephelometer in Pocatello is used to assist with the air quality advisory program.

With the exception of the Rogerson background and the Washington transport sites, the $PM_{2.5}$ sites were selected to meet the community-oriented criteria outlined in the EPA document "Guidance for Network Design and Optimum Site Exposure for $PM_{2.5}$ and PM_{10}" (December 15, 1997). Specifically, the criteria states that these sites be located where people live, work, and recreate, rather than at the expected maximum impact point for specific source emissions. Sites may be located in industrial areas, as well as in residential, commercial, recreational, and other areas where a substantial number of people spend a significant portion of their day.

Overall, Idaho has the most extensive particulate matter-monitoring network in the country with 52 monitors at 26 sites. (**Table 1** shows Idaho's particulate matter sites.) Fifteen of the sites are $PM_{2.5}$ TEOMs. The PM_{10} Hi-Vols and $PM_{2.5}$ Federal Reference Method (FRM) samplers, and PM_{10} TEOMs are FRM or Federal Equivalent Method (FEM) samplers. The $PM_{2.5}$ TEOMs are not and therefore cannot be used for determining attainment area status (see **Background** section). DEQ plans to obtain equivalency status for the $PM_{2.5}$ TEOMs. Similar to the optical samplers, each $PM_{2.5}$ TEOM must be collocated with a FRM sampler for at least one year.

Air Quality Advisory Program

After the 2000 wildfire season, DEQ revised the Air Pollution Emergency Rule, IDAPA 58.01.01.550-562, and Air Quality Advisory Program (see **Element 3**). All air quality advisories are now issued as standardized news releases (see **Appendix C**). They may be based on 24-hour or shorter-term PM_{10} and $PM_{2.5}$ concentrations, as well as relative location, source strength, meteorological forecast, and visibility estimates (see **Table 2**).

Table 1: Idaho PM_{10} and $PM_{2.5}$ Monitoring Sites

LOCATION	HIGH VOLUME		TEOM		TOTAL
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$	
Boise	2	2	1	1	6
Caldwell		1			1
Chubbuck		1			1
Coeur d'Alene	2	1	1	1	5
Garden Valley[1]				1	1
Grangeville				1	1
Idaho City				1	1
Idaho Falls	1	1		1	3
Inkom	1				1
Jerome				1	1
Kamiah	1				1
Lewiston	1	1		1	3
McCall				1	1
Moscow				1	1
Nampa	1	1	1	1	4
Pinehurst		1	1		2
Pocatello	2	1	1	1	5
Post Falls				1	1
Rogerson		1			1
Rupert	1				1
Salmon	2			1	3
Sandpoint		1	1		2
St. Maries	1				1
Soda Springs	1			1	2
Twin Falls	1	1			2
WA Transport		1			1
TOTAL	**17**	**14**	**6**	**15**	**52**

[1] TEOM purchased by USFS.

Table 2: Air Quality Advisories Categories

Air Quality Category	24-Hr $PM_{2.5}$ (ug/m^3)[1]	8-Hr $PM_{2.5}$ (ug/m^3)[2]	1-Hr $PM_{2.5}$ (ug/m^3)[3]	Visibility (miles)[4]
Good	0.0 – 15.4	0.0 – 22.0	0.0 – 40.0	10+
Moderate	15.5 - 40.4	22.1 – 57.7	40.1 – 80.0	5 – 10
Unhealthy for Sensitive Groups	40.5 – 65.4	57.8 – 93.4	80.1 – 175.0	3 – 5
Unhealthy	65.5 –150.4	93.5 – 214.9	175.1 – 300.0	1.5 – 3
Very Unhealthy	150.5 – 250.4	215.0 – 357.7	300.1 – 500.0	1 – 1.5
Hazardous	$\geq$ 250.5	$\geq$ 357.8	$\geq$ 500.1	< 1

1. U.S. EPA Air Quality Index Reporting, 40 CFR 58 (pages 42530-42549), August 4, 1999
2. U.S. EPA SCREEN adjustment factor used (24-hour PM2.5 ÷ 0.7)
3. Fire, Smoke and Health Workshop, Seattle, WA, June 5 - 6, 2001, http://depts.washington.edu/wildfire.
4. Based on Montana DEQ empirical study

Fire and Meteorological Forecasts

Idaho and Montana have the benefit of meteorologists at the Northern Rockies and Eastern Great Basin Coordination Centers who can provide year-round fire potential and fire growth/behavior assessments, as well as daily meteorological forecasts. In addition, Idaho and Montana have a meteorologist who is dedicated to daily forecasting for prescribed fire and wildland fire use. These assessments and forecasts are critical for preparing for and responding to wildfires during the fire season.

Emergency Assistance

The Governor of Idaho's emergency declaration in 2000 made state resources available through the Idaho State Bureau of Disaster Services (BDS) for many efforts, including indoor air quality protection and public advisory radio spots. Any authority that can declare life and/or property are in imminent danger can initiate this process.

As a result, DEQ was able to obtain assistance for public health advisory radio spots. On a daily basis, DEQ provided information on medical admissions, air quality conditions, and meteorological and smoke forecasts to the KSRA Salmon radio station (see **Appendix C**).

The Mayor of Salmon obtained assistance for clean air facilities for the schools and hospital in Salmon. BDS put together a team of experts led by the Department of Health and Welfare, Bureau of Environmental Health and Safety. The team went to Salmon and developed recommendations that were then implemented. Afterwards, a set of guidelines was developed (see **Appendix C**). These guidelines will be useful for future smoke events.

Health Effects Documents

Since 2000, many health effects documents have been developed. The Fire, Smoke, and Health website (http://www.firehealthsmoke.org) contains the following documents:

- Presentation: Wildfire Smoke, A Guide for Public Health Officers
- Wildfire Smoke: A Guide for Public Health Officials
- Tips to Reduce Smoke Exposure and Impacts
- Wildfire Smoke Can Affect You Even Indoors
- Wildfire Smoke and Your Health
- Air Quality during Haze Episodes and Its Impact On Health
- Handling Air Pollution Episodes, Lessons Learned from Big Bar Complex Wildfire

DEQ also developed several flyers and a standardized news release that are included in **Appendix C**.

Element 3 - Abate or Minimize Controllable Sources

> "Programs to minimize PM-10 emissions may include:
>
> (b) wildland fires - prohibition of other burning activities during wildland fire events and steps to minimize fuel loadings in areas vulnerable to fire. Appropriate suppression actions, as determined by the wildlands manager, should be taken for fires that do not meet a prescription. The Federal Wildland Fire Policies require that fire management plans (FMP) be developed for all Federal lands with burnable vegetation.[1] It is anticipated that a goal of FMP will be to prevent NAAQS exceedances caused by wildland fires. Therefore, EPA envisions treating future FMP as acceptable plans for mitigating the public health impacts of smoke from wildland fires on Federal lands. Similar FMP should be developed to serve the same purpose for State and private wildlands." (EPA, 1996)

This section describes the following topics:

- Emergency Rule
- Air Quality Advisory Program
- Wildland Fire Use
- MT/ID Airshed Group Smoke Management Program
- Crop Residue Disposal Smoke Management Program
- Burn Permits
- National Fire Plan
- National Environmental Policy Act (NEPA)
- Coordination
- Training

Emergency Rule

Idaho's Air Pollution Emergency Rule, IDAPA 58.01.01.550-562, establishes criteria for taking appropriate action when air pollutant levels cause or are predicted to cause a health emergency. The rule identifies emergency stages 1 through 4 with each higher stage addressing a progressively more serious air quality event. DEQ has rarely needed to invoke the emergency stage 1, and has never invoked any of the higher stages. During an emergency stage 1, DEQ must call a temporary ban on new ignition of open burning (includes all types of open burning). This limits the ignition of any new sources of open burning and allows existing fires to burn out. DEQ may require, if practicable, or in an emergency situation, the cessation of any open burning. Extinguishing fires depends on available resources and may even further degrade air quality due to smoldering.

In response to multiple smoke events in 2000, the Emergency Rule now has a $PM_{2.5}$ one-hour criteria for the emergency stage 1. Previously, the Emergency Rule required only an air stagnation forecast to invoke the emergency stage 1. Adding numerical criteria provides more

predictability for those who open burn and allows notification for sensitive populations who suffer from smoke-related health problems.

Under the Emergency Rule, DEQ would invoke the emergency stage 1 when $PM_{2.5}$ concentrations reach, or are forecasted to reach, and persist above 80 $\mu g/m^3$ (micrograms per cubic meter). A stage 1 may also be invoked if other data, such as visibility, source strength, or meteorology indicate a public health concern. An isolated spike of 80 $\mu g/m^3$ will not necessarily invoke stage 1. For example, if particulate levels are increasing but meteorological conditions are such that adequate dispersion and ventilation are expected soon, the rule will not necessarily be invoked. Conversely, if particulate levels are increasing and meteorological conditions indicate that adequate dispersion and ventilation are not expected, then the rule may be invoked before the particulate levels reach 80 $\mu g/m^3$.

DEQ selected 80 $\mu g/m^3$ based on a number of considerations including protection of public health. Currently there is little evidence to support any single $PM_{2.5}$ one-hour criteria and health professionals disagree on what level is most appropriate. Ongoing and future research will help to identify the best criteria to use. DEQ will continue to evaluate the scientific data, as it becomes available.

Air Quality Advisory Program

Subsequent to the 2000 wildfire season, DEQ revised the Air Pollution Emergency Rule and air quality advisory program.

Standardized statewide procedures for the advisory program now include the following:

- New 1-hour $PM_{2.5}$ criteria
- Daily air quality and burn restriction information on the DEQ website
- Issuance of standardized news releases
- Email notification list
- Estimating PM based on visibility

Wildland Fire Use

The Federal Wildland and Prescribed Fire Management Policy requires federal land managers to decide within two hours of discovering a fire whether to manage the fire for resource benefit or suppress the fire (USDI and USDA, 1998). This decision is based on many factors including the potential for unacceptable smoke impacts. Montana and Idaho federal land managers, and the two state DEQs developed a four-level air quality restriction system to assist fire managers in the decision-making process (see **Table 3**). The federal land managers sponsor a meteorologist who determines the threshold level on a daily basis based on fire activity, weather forecasts, and air quality data. A recommendation to suppress any new fires may be made at level three ("Warning") or four ("Alert").

Table 3: Suggested Air Quality Restriction Levels for Wildland Fire Use.

Level	24-Hour $PM_{2.5}$ (ug/m3)[1]	Description
I	0-15	Current air quality is "**GOOD.**" No restrictions to wildland fire use based on air quality information.
II	15-40	Air quality "**WATCH**": Current air quality is MODERATE. No restrictions to wildland fire use based on air quality information, but a closer watch on conditions by the Smoke Monitoring Unit of the Montana/Idaho Airshed Group. If conditions worsen, burners may be restricted by geographic region or airshed in Montana and/or Idaho.
III	40-65	Air quality "**WARNING**": Current air quality is UNHEALTHY FOR SENSITIVE GROUPS and conditions are worsening or expected to persist. Depending on season and conditions, future Wildland Fire Use may be restricted due to air quality concerns. Burners should consider reducing smoke impacts by limiting future Wildland Fire Use through their two-hour go/no-go decisions. Formal restrictions may occur at Air Quality Restriction Level IV.
IV	>65	Air quality "**ALERT**": Current air quality is UNHEALTHY, and conditions are worsening or expected to persist. Future Wildland Fire Use ignitions will likely be restricted due to air quality concerns. An "Air Quality Coordinating Committee" composed of the Smoke Monitoring Unit, MT and ID-DEQ, R-1 and R-4 FS, and others (BLM, NPS, etc.) will interface with existing fire coordination centers and infrastructure on daily air quality restrictions and direction. Final decisions on air quality restrictions are always retained with the state air regulatory agencies. At this level, the process has to address the two-hour go/no-go decision timeframe required for WFU.

1. When the main source of particulate matter is from fire, $PM_{2.5}$ may be estimated from PM_{10} by assuming the $PM_{2.5}$ is 80% of the PM_{10}. The air quality levels correspond to the EPA's Air Quality Index for 24-hour $PM_{2.5}$. Shorter-term air quality levels, such as one-hour and eight-hour average concentrations and visibility observations, will also be used to determine the air quality levels and restrictions.

Table 4 provides a comparison of the programs and rules for quick reference.

Table 4: Comparison of Programs and Rules

Program/Rule	Authority	Conditions	Action
Emergency Rule	DEQ	Stage 1 conditions met (1-hr $PM_{2.5}$ criteria or other factors)	Open burn ban (no new ignitions)
Air Quality Advisory Program	DEQ	Air quality conditions above moderate category	Health advisory news release
Wildland Fire Use	Federal Fire Manager	Air Quality Restriction Level 3 or 4	Possibly no new wildland fire use ignitions

MT/ID Airshed Group Smoke Management Program

Idaho and Montana operate a joint smoke management program for forest and range prescribed burning. The program was initiated in Montana in 1978. In 1990 and 1999, north Idaho and south Idaho joined, respectively. The objective of the program is to minimize or prevent smoke impacts from prescribed fires to meet state and federal ambient air quality standards when prescribed burning is necessary. Another objective is the development of alternative methods to burning, when practical. Participants include landowners and managers (federal, state, tribal, and private), state air regulatory agencies, and the National Weather Service. Every year all participants meet to review the program and make any necessary improvements. Participants also prepare public outreach information on the smoke management program, fire ecology, and health effects of smoke.

The program is operational year-round and only applies to forest and range prescribed burning. The program is entirely voluntary in Idaho and members sign a Memorandum of Agreement to abide by the program. Burners submit annual planned burn lists at the beginning of the calendar year and individual burns are reported the day prior to ignition. Burn information includes the burn type, acres, location, and elevation. Burners report the burn date and accomplished acres (blackened) for each burn at the end of the year. Burn plans must include actions to minimize fire emissions, smoke dispersion evaluation, public notification and exposure reduction procedures, and air quality monitoring plan.

A meteorologist uses burn activity, weather, and air quality information to make burn go/no go recommendations. Temperature and wind profiles are collected using weather balloons every morning during the fall season when dispersion conditions can be less favorable. Idaho has established four sites: Grangeville, McCall, Sandpoint, and Salmon. Idaho is divided into 16 airsheds. An airshed is a geographic area with similar topography and meteorology within which the airflow is contained the majority of the time (similar to a watershed). Idaho has also identified 10 impact zones: Fernan Valley (Coeur d'Alene area), Idaho Falls, Ketchum, McCall, Pinehurst, Pocatello, Salmon, Sandpoint, Treasure Valley, and Twin Falls. These areas are considered smoke sensitive areas and are given additional air quality protection as needed. Burn restrictions are generally by airshed, elevation, and/or impact zone.

The final responsibility for ignition and smoke management rests with the member burner. Burners must have training in smoke management techniques. The burner must obtain burn restriction information on burn days from hotlines, websites, or their airshed coordinator. Burners curtail burning if, in their best judgment, smoke dispersion is not adequate even when no restrictions are in place. Conversely, if burners believe smoke dispersion conditions are favorable but there are restrictions in place, the burner may request an exemption. For multi-day burns, burners must work closely with the meteorologist. Membership may be revoked for participants who do not comply with the program.

Burners must notify the airshed coordinator or meteorologist of any potential or actual smoke problems. Public smoke complaints are to be resolved at the lowest possible level whenever possible. The individual receiving the complaint must pass on the complaint information to the airshed coordinator or meteorologist. The meteorologist notifies the state air regulatory agency and maintains a complaint log.

The following websites have more information on this program:

http://www.smokemu.org
MT/ID Airshed Group Monitoring Unit (prescribed fire reporting and restrictions)

http://www.fs.fed.us/r1/fire/nrcc/Smoke_web_pages/intro.htm
MT/ID Smoke Management Coordination (wildland fire use)

Crop Residue Disposal Smoke Management Program

On July 1, 2001, the Idaho State Department of Agriculture (ISDA) adopted temporary rules (effective immediately) for Crop Residue Disposal. The purpose of the rules is to establish general provisions for disposing of crop residue through burning. Below is a description of the rule requirements.

Growers must register their fields larger than five acres with ISDA. The ISDA has set up toll-free numbers for grower information and citizen complaints. The DEQ provides the ISDA with daily burn/no burn recommendations for each county based on meteorological forecasts and air quality data. In turn, the ISDA makes the final burn/no burn designations, which are made available on the Internet and at a toll-free telephone number. Growers must receive approval from the ISDA for the day of the burn. Subsequent to burning, the growers must provide the ISDA with the date and acres burned.

Additional provisions include the following:

- Protection of air quality standards
- No weekend/holiday burning
- Burning only on designated burn days
- Burn 50 feet from structures
- Adequate fire suppression equipment on site

- Burn residue where it is was generated
- Training required for burners (provided by ISDA)
- No burning when DEQ has issued any burn bans

There is a similar smoke management program in northern Idaho (Kootenai and Benewah Counties) that has been in operation for over 20 years. This program was legislatively authorized through the Smoke Management and Crop Residue Disposal Act, Title 22, Chapter 48, Idaho Code.

The following websites have more information on these programs:

http://www.agri.state.id.us/Crop/crdinfo.htm
Crop Residue Disposal Smoke Management Program

http://www.northidahofarmers.org/smoke_management.htm
Northern Idaho Farmers Association smoke management program

Burn Permits

The mission of the Idaho Department of Lands (IDL) Fire Management Bureau is as follows:

- conserve and protect six million acres of private, state, and federal forest lands in the state by preventing and/or suppressing all unwanted fires
- enhance forest management on state endowment lands by utilizing fire as a management tool
- help local communities better cope with wildfire in the wildland/urban interface

IDL requires permits for all open burning (except within incorporated city limits) during the closed fire season (May 10 to October 20) to ensure that the burning is kept under control and prevented from spreading onto another property. The IDL can suspend all permits during times of extreme fire danger as was done between August 15 and September 2, 2000. The permits specify that burning must be conducted in accordance with DEQ's open burning rule (IDAPA 58.01.01.600-616). For certain areas in north Idaho, burners must also call the DEQ air quality hotline for any burn restrictions. For slash burning, permit holders can use alternatives to burning such as chipping, crushing, and lopping to receive slash fee refunds.

National Fire Plan

The National Fire Plan implements activities in five key program areas in order to respond to the severe wildfires of 2000, reduce their impacts on rural communities, and enhance firefighting capabilities in the future. The National Fire Plan is a long-term investment that will help protect communities and natural resources, and most importantly, the lives of firefighters and the public. It is a long-term commitment based on cooperation and communication among federal, tribal, state, and local governments, and interested publics. The federal wildland fire management agencies worked closely with these partners to prepare a 10-Year Comprehensive Strategy, completed in August 2001. An implementation plan will be developed in 2002 to provide consistent and standard direction to implement the common purposes articulated in the

strategy and the National Fire Plan (available at http://www.fireplan.gov/overview_1_28_02.cfm).

Under the National Fire Plan, funding is provided for fuels management and reduction to address the problem of dense wildland vegetation that has resulted from decades of wildfire suppression and fire exclusion on federal lands. Hazardous fuels reduction activities will focus on wildland/urban interface areas to reduce the risk to people and property. Joint projects will be implemented with states, tribes, and other cooperators, based on the collaborative identification of communities most vulnerable to wildland fire.

Treatments are planned on approximately 3.2 million acres of federal lands (1.8 million acres to be treated by the USDA Forest Service and 1.4 million acres by the Department of the Interior). Treatments are also planned on some 395,000 acres of non-federal lands by state and local fire organizations, using funds appropriated for the Forest Service State Fire Assistance program. In the Federal Register, 438 communities in Idaho were identified as "Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfires" (FR Vol. 66, No. 160, August 17, 2001). The information contained in the list will be used by interagency groups of land managers at the state and/or tribal level to collaboratively identify priority areas within their jurisdictions that would benefit from hazard reduction activity. This will ensure that available funding focuses on areas of local importance and opportunities to reduce risk on a meaningful scale.

Under the National Fire Plan, funding will also be used to rehabilitate and restore watersheds, closely matching historical or pre-fire ecosystem structure, function, diversity, and dynamics. Projects will focus on restoring watershed function, including protection of basic soil, water resources, and biological communities as well as prevention of invasive species. While biological rehabilitation emphasizes planting native grasses, forbs, shrubs, and trees, use of non-native species is occasionally necessary to ensure that site stability and competition against non-natives are being accomplished, particularly on arid sites where cheatgrass is a problem (from National Fire Plan, available at http://www.fireplan.gov/hazardous.cfm).

In 2001, the National Fire Plan Wildland Urban Interface (WUI) Grant Program awarded more than $3.5 million through the Idaho Department of Lands. The Student Conservation Association worked with local governments, schools, corporate entities, and private individuals to promote fire safe communities. Three Idaho communities began work on developing fire resistant greenbelts. Shoshone and Kootenai Counties received 70 percent of the WUI funds for hazardous fuel reduction in 11 communities. Several agencies collaborated together to present 35 workshops across the state to raise awareness of wildfire risks, and promote fire prevention and fire safe communities. The Idaho Department of Commerce also received nearly $1 million for community fire planning and economic action projects.

National Environmental Policy Act (NEPA)

Public review is required in the National Environmental Policy Act (NEPA) process when federal agencies disclose the environmental impacts of proposed plans and projects. It is through this process that the federal land manager discloses how air quality may be impacted. Federal

agencies generally notify interested parties of new projects and plans through mailing lists, local newspapers, and the Federal Register.

The EPA's Interim Air Quality Policy on Wildland and Prescribed Fires provides a list of elements that should be included in an environmental impact analysis for project and regional planning on federal lands (EPA, 1998).

According to the policy, an environmental impact analysis should include the following:

- Recent historic and projected annual or seasonal emissions from wildland and prescribed fires
- Cumulative impacts of fires on regional and subregional air quality, when possible
- Applicable regulations, plans, or policies
- Identification of sensitive receptors
- Descriptions of planned measures to reduce smoke impacts
- Identification of the potential for smoke intrusions into sensitive areas, and model air quality and visibility impacts, when possible
- Description of ambient air monitoring plans, when appropriate

Coordination

The 2000 natural wildfire event required a new level of coordination with federal, state, and local agencies, both in Idaho and in surrounding states. DEQ developed an email notification list including persons from other states, other Idaho state and local agencies, the Governor's office, state and local smoke management program coordinators, etc., for issuing air quality advisories. In addition, a "neighbor" contact list was developed with key smoke management contacts from surrounding states (see **Appendix D**).

The Monitoring Unit (MU) for the MT/ID Airshed Group includes a full-time meteorologist/program coordinator and assistant. The MU tracks weather, air quality, burn activity, and smoke events year round. When there is the potential for a smoke event or a smoke event is occurring, the MU plays a key role as a central location for information.

Training

Training programs have two components: land management and regulatory requirements.

Land Management. EPA's Interim Air Quality Policy on Wildland and Prescribed Fires states that "Persons responsible for managing greater than de minimis fires should be adequately trained in fire and smoke management," (EPA, 1998). Federal and state fire management agencies generally have well established training programs in fire use and behavior, weather, and smoke management. Training includes basic management techniques (smoke impact and emissions reduction) and meteorology (smoke dispersion), such as is provided in the National Wildfire Coordinating Group (NWCG) smoke management techniques course (RX410). Training also includes fire suppression techniques as is provided in NWCG basic firefighter courses (S-130, S-190).

The Idaho State Department of Agriculture's (ISDA) crop residue disposal training includes smoke management techniques, and information on ISDA and DEQ rules. Growers who take this training obtain credit hours that go towards their pesticide license renewal requirements. ISDA also provides the training at request by any group (Master Gardeners, Idaho Farm Show, Extension agencies, Universities, etc.).

The Idaho Department of Lands (IDL) Forest Management Bureau provides statewide technical guidance in protection, improvement, and utilization of forest resources on state lands. The IDL Forestry Assistance Bureau provides technical assistance for forest management to government agencies and private forestland owners. It administers the Forest Stewardship Program for private forestlands, the Urban and Community Forestry Program for community forests, and enforces the State Forest Practices Act.

Regulations. Open burning and smoke management related rules and programs are available on the Internet (see **Appendix D**). DEQ provides training on Idaho's smoke management program and rule requirements annually at the RX410 course. In addition, DEQ attends the annual meetings of the MT/ID Airshed Group to provide program and rule updates.

In order to reach others in the burn community who do not have formal training programs (state, tribal, and private land owners/managers), other outreach methods such as brochures, press releases, or onsite visits are used. The negotiated rulemaking process is also an indirect training opportunity that involves the public and affected parties in rule development.

Element 4 - Identify, Study, and Implement Mitigation Measures

> "The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible." (EPA, 1996)

This section describes the following topics:

- Web-Based Monitoring
- Open Burning Rule
- Emissions Inventories
- MT/ID Airshed Group Smoke Management Program
- Crop Residue Disposal Smoke Management Program
- Mobile Monitoring Units
- Website Development
- Medical Assessments
- National Environmental Policy Act (NEPA)
- Urban/Wildland Interface Communities
- Regional Haze
- Training

Web-Based Monitoring

DEQ is committed to upgrading its data acquisition system so that near real-time air quality data will be updated automatically on DEQ's website. Currently, air quality data are manually entered in the morning and updated as needed during the day. Air quality trends are a key smoke management tool. Typically, gradual increases in particulate matter indicate urban pollution build up or long-range smoke transport. A rapid increase is more often associated with a nearby wildfire or prescribed fire gone awry.

Open Burning Rule

DEQ has commenced work on revising its open burning rule (IDAPA 58.01.01.600-616). The rule has not been significantly revised in over 15 years. The rule contains inconsistencies between the rule language and the requirements of other local, state, and federal rules, regulations and laws, as well as awkward and ambiguous phrasing. Correcting these deficiencies will better protect human health and the environment from air pollutants resulting from open burning.

The following changes are being proposed:

- Limit burning of material that causes excessive smoke
- Generally limit open burning to daylight hours
- Clarify when burning of domestic household waste is allowed

- Recommend reasonable precautions for open burning
  - Burning only when fuels are dry and smoke dispersion is adequate
  - Notifying neighbors
  - Avoiding smoke impacts to nearby residents and businesses
  - Avoiding burning during weekends, holidays, and special events
  - Avoiding the creation of visibility hazards along roadways
  - Checking with local fire agency for safety requirements
- Require prescribed burning that does not meet all the conditions of an existing smoke management program, comply with restrictions prescribed by DEQ
- Reference the Smoke Management and Crop Residue Disposal Act, Idaho Code § 22-4801, and the associated Idaho Department of Agriculture rules

Emissions Inventories

DEQ has recently hired a full-time emissions inventory coordinator. This, along with the new Crop Residue Disposal Rules requiring burn reporting, will provide more accurate statewide fire emissions inventories. Without these data, it is difficult to know the relative impact of sources, and develop effective plans and programs.

MT/ID Airshed Group Smoke Management Program

The MT/ID Airshed Group Smoke Management Program is evaluated annually by the membership. A significant improvement planned for this year is development of a web-based reporting system. Previously, the burn reporting system has been very resource intensive and therefore limited on the amount of data collected and analyzed. The new web-based system will allow burners to input all their planned burns into a database at the beginning of the calendar year. During the burn season, burners will use this database to select each of their planned burns for up to five days out and report what was burned on previous days. This data may then be used to quickly and easily map burns with ArcView GIS, investigate smoke events, optimize burn timing, prepare annual reports, etc. This new system will greatly increase the MU's ability to manage smoke, and respond to urgent issues and inquiries.

Crop Residue Disposal Smoke Management Program

After the first year of implementation of the ISDA Crop Residue Disposal Rules in 2001, many improvements are planned in 2002 based on input from the implementing agencies (primarily ISDA and DEQ), public, and growers. Some of these include establishing an air quality threshold for cessation of burning, and eliminating the 45-day spring and fall burn window limitations so burning can be spread out over time and conducted under optimal dispersion conditions. To better implement the rules, ISDA plans to deploy seasonal field staff so that local meteorological conditions and test burn results can factor into the burn decisions. In addition, DEQ is pursuing funding to develop an airshed-capacity model to allow more precise quantification of acres a given airshed can handle without degrading air quality.

Mobile Monitoring Units

In 2000, EPA provided DEQ with emergency funds to purchase additional real-time air quality monitoring instrumentation. While smoke impacts from wildfires began occurring in Salmon mid-July, it took one month to set up a real-time monitor there due to the time needed to purchase the equipment and find a suitable site. DEQ will be investigating funding sources for establishing several mobile monitoring units that would be immediately available for deployment on any future natural wildfire events. These data are critical for public advisories and to accompany any medical assessments.

Website Development

DEQ will continue to develop its website to provide the public with current information in the following areas:

- Rules and regulations
- Smoke management programs
- Burn restrictions
- Contacts and hotlines
- Fire activity, current and potential
- Weather forecasts and satellite imagery
- Smoke affects on health
- Real-time air quality data
- Public advisories
- Educational materials and publications

Medical Assessments

DEQ will work with the state and local health agencies to determine data needs for conducting medical assessments of smoke events. Some hospitals and clinics were contacted during the 2000 wildfire event for daily medical admission information but the results were very incomplete. Standard procedures are needed for data collection that will provide a more complete assessment of the health impacts from smoke events.

National Environmental Policy Act (NEPA)

Last year, the 1995 Federal Wildland Fire Management Policy (FWFMP) was reviewed by a working group composed of many federal agencies (USDI and USDA, 2001). One of the findings was that federal planning documents were out of date or inconsistent with the 1995 policy. The FWFMP, and the EPA Interim Air Quality Policy on Wildland and Prescribed Fires (EPA, 1998) call for land management and regulatory agencies to work together. The primary avenue for participation in federal planning efforts is through the NEPA process. This, however, has not proved to be a very effective approach.

The air quality analysis in land management plans tend to be very general (i.e., Clean Air Act requirements will be met). Fire management plans generally do not need to follow the NEPA

process as they are tied to the land management plans. Project level documents generally contain a brief summary of the air quality analysis from project files (project files are available upon request). Each federal unit will have one land management plan and sometimes a fire management plan, but will have numerous project level documents. Some projects or plans take years to move from initial scoping to final Environmental Impact Statements. In Idaho, with 12 national forests, 6 wildlife refuges, 4 national parks, and 14 BLM resource areas, the number of documents to review quickly becomes unmanageable. For example, DEQ reviewed and commented on over 100 documents in 2000. DEQ, the EPA (Region 10), the Idaho BLM, and USFS have conducted several meetings over the past several years to address this problem. The group has begun work on developing an air quality analysis template for project-level documents. There are also discussions to develop a template for plan-level documents. The templates would represent the type and amount of air quality analysis that the state and federal agencies agree are adequate. This effort will be continued.

Western States Air Resource Council (WESTAR) conducted a fire-needs survey of 15 western states. A better understanding of the NEPA process was one of the needs identified. In the spring of 2002, a workshop was held for federal and state agencies. The purpose was to help states more effectively review/comment on NEPA documents. The group spent a day reviewing the NEPA process and a day developing recommendations for analysis of air quality affects from fire at the various planning levels.

Fire Management Plans

The USFS Fire Management Plan (FMP) direction is under revision. Future FMPs will likely improve integratation of wildland fire (both wildland fire suppression and wildland fire use) and fuel management (both prescribed fire and non-fire applications) implementation. Air quality and smoke management will be considered in FMPs.

The FMP formally documents the fire program based on the Forest Plan. The FMP is the fire manager's tool for implementing fire-related direction on the ground. The FMP expands strategic Forest Plan direction into specific fire management direction for each fire management unit delineated in the FMP.

Urban/Wildland Interface Communities

There were 438 Idaho communities identified as urban/wildland interface communities at high wildfire risk (FR Vol. 66, No. 160, August 17, 2001). Preliminary criteria for risk evaluation and management were also proposed (FR Vol. 66, No. 3, January 4, 2001). Smoke impacts to air quality and human health were not included in any of the three criteria. Many communities in central Idaho experience smoke impacts from wildfires year after year due to local meteorology, topography, and vicinity to public lands. DEQ commented that the potential for air quality impacts should be added to the risk factors to help with prioritizing fuel treatments for these communities. DEQ plans to follow this issue and has offered assistance with criteria development.

Regional Haze

The Regional Haze Rule was published in 1999 (FR Vol. 64, No. 126, July 1, 1999). The rule requires all states to develop visibility plans to address regional haze impairment to designated national park and wilderness areas (Class I Areas). Class I Areas in Idaho include Sawtooth Wilderness and Craters of the Moon National Monument. In addition, Idaho shares the Selway-Bitterroot Wilderness with Montana, Hell's Canyon National Recreation Area with Oregon, and Yellowstone National Park with Montana and Wyoming.

The Regional Planning Organization for western states is the Western Regional Air Partnership (WRAP) which includes 13 states, 10 tribal governments, and 3 federal agencies. WRAP is providing the technical and policy tools for states and tribes to implement the Regional Haze Rule. The WRAP committees and forums do the majority of the work. These groups seek consensus among the governmental partners and stakeholders including large and small businesses, academia, environmental groups, and other public interest representatives.

The Fire Emissions Joint Forum (FEJF) is the primary group addressing fire effects on air quality and visibility. DEQ is one of two state air agency representatives on the FEJF. The FEJF is addressing the following areas for all types of fire (wildfire, wildland fire use, prescribed fire, field burning):

- Basic and Enhanced smoke management programs
- Prescribed fire program assessment
- Alternatives to burning
- Fire emissions inventory and assessment
- Natural visibility conditions
- Public education and outreach

Training

The interagency course on smoke management techniques (RX410) is being updated this year. The last time the course was updated was over 10 years ago. DEQ plans on participating in this update. This course is important for training federal and state fire managers on air quality regulations and smoke management programs.

Burners have indicated an interest in a basic meteorological course for smoke management. DEQ rules and smoke management programs require burns to be conducted under optimal smoke dispersion conditions. DEQ will pursue establishing an annual meteorological course.

Element 5 - Periodic Evaluation

> "(a) the conditions causing violations of a PM-10 NAAQS in the area, (b) the status of implementation of the NEAP, and (c) the adequacy of the actions being implemented. The State should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan." (EPA, 1996)

The NEAP will be evaluated as needed, but at least once every five years. Input will be requested from all interested parties. Each element will be evaluated for whether it was implemented and effective, or whether improvement is needed. If any wildfire natural events occur in the future, event documentation will be prepared and made available to the public for review. Subsequent to any NAAQS exceedences due to future natural wildfire events, the NEAP may be revised if needed. New regulations and research information will be considered and incorporated as needed.

In addition, periodic meetings will be held between DEQ and the fire management agencies (Federal and State) to update contact lists, agreements, and define roles and responsibilities.

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APPENDIX A:
EPA NATURAL EVENTS POLICY AND 1998 MEMORANDA

EPA Natural Events Policy Memorandum

MEMORANDUM

DATE: May 30, 1996

SUBJECT: Areas Affected by PM-10 Natural Events

FROM: Mary D. Nichols
Assistant Administrator
for Air and Radiation (6101)

TO: Director, Air, Pesticides and Toxics Management Division, Regions I and IV
Director, Air and Waste Management Division, Region II
Director, Air, Radiation and Toxics Division, Region III
Director, Air and Radiation Division, Region V
Director, Air, Pesticides and Toxics Division, Region VI
Director, Air and Toxics Division

Purpose

This memorandum sets forth the Environmental Protection Agency's (EPA's) policy for protecting public health in areas where the PM-10 (particulate matter having a nominal aerodynamic diameter less than or equal to 10 microns) national ambient air quality standards (NAAQS) are violated due to natural events. This policy will be followed in implementing the PM-10 NAAQS until it is superseded.[1] The need for revisions to this policy will be considered by EPA, State agencies and the Federal Advisory Committee Act's Particulate Matter/Ozone/Regional Haze Subcommittee if the NAAQS for particulate matter are revised.

[1] This document contains EPA policy and, therefore, does not establish or affect legal rights or obligations. It does not establish a binding norm and it is not finally determinative of the issues addressed. In applying this policy in any particular case, the EPA will consider its applicability to the specific facts of that case, the underlying validity of the interpretations set forth in this memorandum, and any other relevant considerations, including any that may be required under applicable law and regulations.

Three categories of natural events have been identified as affecting the PM-10 NAAQS: (1) volcanic and seismic activity, (2) wildland fires, and (3) high wind events. These PM-10 natural events are defined further below. If other significant categories of natural events are identified, they may be added to this policy in the future.[2]

Background

Prior to the 1990 Clean Air Act Amendments (Act), the Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events (exceptional events guideline) and Appendix K to 40 CFR, part 50, were issued by EPA to address, in part, the situation where natural sources strongly influence an area's PM-10 air quality. To avoid imposing potentially unreasonable State implementation plan (SIP) requirements on such areas, EPA provided for the exclusion of certain natural source data from nonattainment determinations. Thus, Appendix K provides, in part, that measured exceedances of the PM-10 NAAQS in an area may be discounted from decisions regarding attainment status if the data are shown to be influenced by uncontrollable events caused by natural sources of particulate matter. The 1986 exceptional events guideline contains EPA's guidance regarding the process States should follow when dealing with PM-10 air quality data that may be eligible for the adjustments authorized under section 2.4 of Appendix K.

Subsequently, the Act added section 188(f) which provides EPA with discretionary statutory authority to waive either a specific attainment date or certain planning requirements for serious PM-10 nonattainment areas that are impacted significantly by nonanthropogenic sources. The EPA states in current PM-10 guidance documents that it interprets the section 188(f) waiver provision to mean that the data exclusion policy contained in Appendix K and the procedures described in the exceptional events guideline no longer apply.

Under this natural events policy, those statements no longer reflect EPA's interpretation of the relationship between the section 188(f) waiver provision, Appendix K, and the exceptional events guideline and should be treated as revised to the extent described herein.

In establishing this natural events policy, EPA now believes that, under certain circumstances, it is appropriate to again exclude PM-10 air quality data that are attributable to uncontrollable natural events from the decisions regarding an area's attainment status. The discussion in the Appendix at the end of this memorandum briefly describes the legal rationale underlying this revised interpretation.

[2] Other types of temporary or exceptional events that can impact ambient PM-10 concentrations are structural fires, chemical spills, industrial accidents, and clean-up activities following a major disaster. The EPA's Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events, July 1986, is still applicable for treating air quality data resulting from these types of exceptional, anthropogenic events.

Description of Policy

The policy described in this document addresses PM-10 NAAQS violations caused by natural events in areas designated unclassifiable or attainment. It also addresses certain reclassification and redesignation questions for PM-10 nonattainment areas. This policy applies at the time the State determines that a PM-10 NAAQS has been violated due to natural events and addresses the question of what should be done to protect public health. The policy provides that EPA will: (1) exercise its discretion under section 107(d)(3) not to redesignate areas as nonattainment if the State develops and implements a plan to respond to the health impacts of natural events; and, (2) redesignate nonattainment areas as attainment by applying Appendix K, on a case-by-case basis, to discount data in circumstances where an area would attain but for exceedances that result from uncontrollable natural events.

The guiding principles followed in developing this policy are:

1. Protection of public health is the highest priority of Federal, State, and local air pollution control agencies.

2. The public must be informed whenever the air quality in an area is unhealthy.[3]

3. All valid ambient air quality data should be submitted to the EPA Aerometric Information Retrieval System (AIRS) and made available for public access.

4. State and local agencies must take appropriate reasonable measures to safeguard public health regardless of the source of PM-10 emissions.

5. Emission controls should be applied to sources that contribute to exceedances of the PM-10 NAAQS when those controls will result in fewer violations of the standards.

Definition of PM-10 Natural Events

Volcanic and seismic activities: Ambient PM-10 concentrations caused by volcanic eruptions or seismic activity will be treated as due to natural events. Volcanic eruptions contribute to ambient PM-10 concentrations in two ways: (1) with emissions of primary PM-10 (e.g., ash), and (2) with emissions of precursor pollutants (e.g., sulfur dioxide) that react to form secondary particulate matter. Seismic activity (e.g., earthquakes) can also contribute to ambient PM-10 concentrations by shaking the ground, causing structures to collapse and otherwise raising dust (primary PM-10 emissions).

[3] The air quality is considered unhealthy whenever the 24-hour PM-10 NAAQS is exceeded. The short-term PM-10 NAAQS is exceeded when the 24-hour average PM-10 concentration is greater than 150 micrograms per cubic meter ($\mu g/m^3$). The 24-hour NAAQS is violated when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is greater than 1.0, as determined by procedures described in Appendix K.

Also, emissions caused by anthropogenic activities that re-entrain volcanic ash during the first year (12 months) following an event will be treated as due to the natural event. One year is considered adequate time for cleaning ash deposits from areas where anthropogenic activities (e.g., vehicle traffic) would cause reentrainment. After 1 year, only emissions resulting from reentrainment of ash by high winds will be treated as due to a natural event.

Wildland fires: Ambient PM-10 concentrations caused by smoke from wildland fires will be treated as due to natural events if the fires are unwanted fires, not designated or managed as prescribed fires, and requiring appropriate suppression action by the wildlands manager.[4]

For the purposes of this policy, wildland fire natural events are limited to unwanted fires that do not meet a prescription (wildfires) and, therefore, require appropriate suppression actions. Wildland prescribed fires, burning of forest harvest residues, agricultural burning, and fires for land clearing are not covered by this natural events policy. The EPA will develop broader guidance in the near future to address issues raised by smoke emissions from wildland prescribed fires and other policy issues surrounding prevention of significant deterioration, conformity, visibility protection programs and regional haze.

High Winds: Ambient PM-10 concentrations due to dust raised by unusually high winds will be treated as due to uncontrollable natural events under the following conditions: (1) the dust originated from nonanthropogenic sources, or (2) the dust originated from anthropogenic sources controlled with best available control measures (BACM).[5]

The BACM must be implemented at contributing anthropogenic sources of dust in order for PM-10 NAAQS exceedances to be treated as due to uncontrollable natural events under this policy. Therefore, BACM must be implemented for anthropogenic dust sources contributing to NAAQS exceedances in attainment and unclassifiable areas and in moderate PM-10 nonattainment areas. In unclassifiable and attainment areas, BACM must be implemented for those contributing sources for which it has been defined within 3 years after the first NAAQS violation attributed to high wind events or from the date of this policy. In these same areas, implementation should be as expeditious as practicable for sources for which BACM are undefined.

The conditions that create high wind events vary from area to area with soil type, precipitation and the speed of wind gusts. Therefore, the State must determine the unusually high wind conditions that will overcome BACM in each region or subregion of the State.

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[4] The EPA recognizes and endorses the Federal Wildland Fire Policies adopted by the Departments of Interior and Agriculture in December 1995. These policies refer to all fires on sparsely populated lands managed by Federal agencies (e.g., national parks, national forests, grasslands, etc.) as wildland fires. The wildland fires term includes unwanted fires that do not meet a prescription (wildfires), management-ignited prescribed fires, and naturally-ignited fires that meet a prescription (prescribed natural fire). Only wildland fires that meet a prescription may be used to accomplish land and resource management objectives.

[5] BACM for PM-10 are techniques that achieve the maximum degree of emissions reduction from a source as determined on a case-by-case basis considering technological and economic feasibility (59 FR 42010, August 16, 1994).

Response to NAAQS Violations

If natural events cause ambient concentrations of PM-10 to violate a NAAQS, a plan should be developed to address future events.[6] A natural events action plan (NEAP) should include commitments to:

1. Establish public notification and education programs. Such programs may be designed to educate the public about the short-term and long-term harmful effects that high concentrations of PM-10 could have on their health and inform them that: (a) certain types of natural events affect the air quality of the area periodically, (b) a natural event is imminent, and (c) specific actions are being taken to minimize the health impacts of events.

2. Minimize public exposure to high concentrations of PM-10 due to future natural events. Programs to minimize public exposure should: (a) identify the people most at risk, (b) notify the at-risk population that a natural event is imminent or currently taking place, (c) suggest actions to be taken by the public to minimize their exposure to high concentrations of PM-10, and (d) suggest precautions to take if exposure cannot be avoided.

3. Abate or minimize appropriate contributing controllable sources of PM-10. Programs to minimize PM-10 emissions may include:

(a) volcanic and seismic activities - cleaning ash and dust deposits from areas where it would be re-entrained into the air by anthropogenic activities;

(b) wildland fires - prohibition of other burning activities during wildland fire events and steps to minimize fuel loadings in areas vulnerable to fire. Appropriate suppression actions, as determined by the wildlands manager, should be taken for fires that do not meet a prescription. The Federal Wildland Fire Policies require that fire management plans (FMP) be developed for all Federal lands with burnable vegetation.[7] It is anticipated that a goal of FMP will be to prevent NAAQS exceedances caused by wildland fires. Therefore, EPA envisions treating future

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[6] The annual PM-10 NAAQS is violated if the expected average annual arithmetic mean concentration for the past 3 calendar years is greater than 50 $\mu g/m^3$. Several elevated 24-hour PM-10 concentrations caused by natural events can potentially cause the annual NAAQS (which is an annual arithmetic mean of 24-hour concentrations) to be exceeded. If natural events cause the annual NAAQS to be violated, one NEAP for the area will cover both the 24-hour and annual NAAQS.

[7] FMP are not in place for all Federal lands at this time. These plans will be developed by Federal land managers in conjunction with all stakeholders including Federal, State and local air management agencies. The FMP will integrate fire, as a natural ecological process, into land and resource management plans and will form the basis for management actions taken on wildland fires. The FMP must include prescriptions for any use of fire to meet land and resource management objectives.

The EPA anticipates that FMP will achieve an acceptable balance between forest health and public health concerns. Public health concerns caused by the potential effects of smoke on air quality from wildland fires will be addressed in FMP through smoke management plans and other measures. Smoke management plans attempt to minimize smoke impacts by monitoring fire behavior, meteorology and air quality during the fire and by publicly announcing forecasts of likely smoke conditions in communities impacted by ongoing fires. Since

FMP as acceptable plans for mitigating the public health impacts of smoke from wildland fires on Federal lands. Similar FMP should be developed to serve the same purpose for State and private wildlands.

(c) High winds - application of BACM to any sources of soil that have been disturbed by anthropogenic activities. The BACM application criteria require analysis of the technological and economic feasibility of individual control measures on a case-by-case basis. The NEAP should include analyses of BACM for contributing sources. The BACM for windblown dust include, but are not limited to, application of chemical dust suppressants to unpaved roads, parking lots and open areas; dust suppression at construction sites; use of conservation farming practices on agricultural lands; tree rows and other physical wind breaks; restricting or prohibiting recreational off-road vehicle activities; and use of surface coverings. If BACM are not defined for the anthropogenic sources in question, step 4 below is required.

4. Identify, study and implement practical mitigating measures as necessary. The NEAP may include commitments to conduct pilot tests of new emission reduction techniques. For example, it may be desirable to test the feasibility and effectiveness of new strategies for minimizing sources of windblown dust through pilot programs. The plan must include a timely schedule for conducting such studies and implementing measures that are technologically and economically feasible.

5. Periodically reevaluate: (a) the conditions causing violations of a PM-10 NAAQS in the area, (b) the status of implementation of the NEAP, and (c) the adequacy of the actions being implemented. The State should reevaluate the NEAP for an area every 5 years at a minimum and make appropriate changes to the plan.

Form and Timing of the Response

The NEAP should be developed by the State air pollution control agency in conjunction with the stakeholders affected by the plan. Development of a NEAP for wildland fires should include input from Federal, State and private land managers in areas vulnerable to fire. Also, agencies responsible for suppressing fires and the citizens in the affected area should be involved in developing the plan. Development of a NEAP for high- wind events should include input from Federal, State and private managers of open desert lands, rangelands, agricultural lands; the construction industry; and organizations promoting the use of recreational off-road vehicles. Development of a NEAP for volcanic and seismic activities should include input from geophysicists and public works officials who will be responsible for ash removal and disposal. The plan should include documented agreements among the stakeholders as to planned actions, the implementation schedule, and the parties responsible for carrying out those actions.

FMP will treat fire as a natural ecological process, the impact of wildland fires on air quality and regional haze is expected to increase in the future. Therefore, EPA will encourage Federal land management agencies to support air quality monitoring near fires, to assess air and haze impacts, and to develop a fire information data base and regional-scale smoke management plans.

At a minimum, States should develop NEAP for any areas where natural events cause or have caused a PM-10 NAAQS to be violated within 18 months of the violation or the date this policy is issued. The NEAP should be made available for public review and comment and may, but are not required to, be adopted as revisions to the SIP if current SIP rules are not revised. Final plans should be submitted to EPA for review and comment.

Documentation of Natural Events

In circumstances where a State has reason to believe that natural events have caused measured exceedances of the NAAQS, the State is responsible for establishing a clear causal relationship between the measured exceedance and the natural event. Supporting documentation concerning the natural event could include filter analysis, meteorological data (e.g., wind speed and wind direction to support a source receptor relationship), modeling and receptor analysis, videos and/or photographs of the event and the resulting emissions, maps of the area showing sources of emissions and the area affected by the event, and news accounts of the event.

In the case of high-wind events where the sources of dust are anthropogenic, the State must document that BACM were required for those sources, and the sources were in compliance at the time of the high-wind event. If BACM are not required for some dust sources, the NEAP developed must include agreements with appropriate stakeholders to minimize future emissions from such sources using BACM.

The type and amount of documentation provided for each event should be sufficient to demonstrate that the natural event occurred, and that it impacted a particular monitoring site in such a way as to cause the PM-10 concentrations measured. This documentation should also provide evidence that, absent the emissions from the natural event, concentrations of PM-10 at the monitoring site under consideration would not cause a NAAQS exceedance.

The State should also make the documentation of natural events and their impact on measured air quality available to the public for review. This may be accomplished through a number of means, such as the publishing of newspaper announcements, periodic reports on air quality in the area, and through public hearings. This would serve to allow the public an opportunity to comment on whether the causal relationship between the natural event and the air quality measurement is convincing. Also, open hearings, where State and local regulatory boards review the documentation, are useful forums in which to notify the public of potentially important policy decisions.

When air quality data affected by a natural event are submitted to EPA for inclusion into the AIRS database, the State should request that a flag be placed on the data to indicate that a natural event was involved. Documentation to support the flagged data should be maintained by the State. A copy of the documentation should be sent to the relevant EPA Regional Office monitoring representative no later than 180 days from the time the exceedance occurred or from the date of this policy for past events. The Regional Office will acknowledge receipt of the documentation and confirm that the natural event data were flagged within 60 days.

Current PM-10 Nonattainment Areas

States may request that a moderate nonattainment area not be reclassified as serious if it can be demonstrated that the area would attain the standards by the statutory attainment date but for emissions caused by natural events. Similarly, States may request redesignation of nonattainment areas to attainment if it can be demonstrated that the area would be meeting the NAAQS but for the emissions caused by natural events. This policy applies to emissions caused by natural events that have occurred since January 1, 1994.[8]

Approval of the above requests will be made by EPA on a case-by-case basis as determined by the sufficiency of the information submitted by the State to substantiate its claim. At a minimum, the State must have adopted a SIP for the area which demonstrates that, but for the emissions from natural events, the area would be able to attain the NAAQS. All of the requirements under section 107(d)(3)(E) of the Act must also be satisfied before an area can be redesignated to attainment. Those requirements include the submittal of a maintenance plan under section 175A, among other things. The maintenance plan for areas affected by natural events must include a NEAP.

Failure to Submit a Natural Events Action Plan

If a State fails to submit an adequate NEAP within 18 months in response to violations of a PM-10 NAAQS, EPA will notify the governor of the State that the area should be redesignated as nonattainment. The EPA's action, in such instances, would be authorized under the Act based on the conclusion that the health of citizens affected by such events is not being protected by the State.

Once the area violating the NAAQS is designated nonattainment, the State will be required to adopt a federally- enforceable SIP revision and address the sources of PM-10 emissions. Most likely, the SIP revision will include many of the same mitigative measures that could have been included in a NEAP.

[8] The 1990 Amendments to the Clean Air Act required that control measures for anthropogenic sources in PM-10 nonattainment areas be implemented by the end of 1993. Therefore, this policy is made retroactive to January 1, 1994 so that NAAQS exceedances that may prevent areas from having sufficient clean air quality data to meet the standards will be covered by this policy.

APPENDIX

INTERPRETATION OF THE CLEAN AIR ACT (ACT) AS AMENDED IN 1990

Section 107(d)(4)(B) of the Act, as amended in 1990, provided EPA with the authority to designate initial areas as nonattainment for PM-10. Where such determinations involved an assessment of a potential PM-10 nonattainment area's air quality data, Congress expressly required such assessments to be made in accordance with Appendix K (section 107(d)(4)(B)(ii)). Since, upon enactment, Congress did not alter or revise Appendix K in any way, all the provisions of Appendix K, including section 2.4, remained applicable under the Act. Among other things, section 2.4 authorizes EPA to discount air quality data that are attributable to "an uncontrollable event caused by natural sources" of PM-10. Consequently, if an area's nonattainment problem was attributable to uncontrollable natural sources, application of section 2.4 of Appendix K would allow the data from the uncontrollable natural event to be excluded from regulatory determinations regarding an area's nonattainment status.

The Act also added section 188(f) which specifically addresses the adverse influence of nonanthropogenic PM-10 sources. This section provides EPA with discretionary authority to waive a specific attainment date for all areas or certain planning requirements for serious PM-10 nonattainment areas that are significantly impacted by nonanthropogenic sources.

The EPA previously interpreted the inclusion of such an express waiver provision in the 1990 Amendments as implying that Congress may have intended to limit the application of section 2.4 of Appendix K. The argument in support of this interpretation was that in contrast to section 2.4 of Appendix K, which contemplates the discounting of data due to emissions from certain events, the section 188(f) waiver provisions envisioned that adjustments prompted by adverse air quality impacts that are attributable to data from natural uncontrollable sources of PM-10 should be made only after all the data have been considered and the area has been designated nonattainment.

The EPA, however, believes that this is not the only reasonable interpretation of the Act's provisions that is possible. The EPA believes that the congressional directive in section 107(d)(4)(B)(ii) to base designation decisions on Appendix K, and the differences in how section 188(f) and Appendix K address issues related to emissions from natural sources, indicate that it is not necessary to conclude that section 188(f) limits the application of section 2.4 of Appendix K. Rather, it is possible to view both section 188(f) and section 2.4 of Appendix K as being operative and dealing with related but distinct aspects of the issues connected with emissions from natural PM-10 sources.

The starting point for this analysis is section 107(d)(4)(B)(ii), which, by operation of law, designated nonattainment any area with data showing a violation of the PM-10 NAAQS before January 1, 1989 "(as determined under part 50, appendix K of title 40 of the Code of Federal Regulations)." In that section, Congress required the use of Appendix K in designating areas nonattainment without indicating that any portion of Appendix K was to be considered invalid. Thus, that provision indicates that Congress intended designation decisions to be based on that appendix, including the procedures in section 2.4 regarding exceptional events.

Notably, section 2.4 defines an exceptional event as "an uncontrollable event caused by natural sources of particulate matter or an event that is not expected to recur at a given location." Thus, exceptional events include both uncontrollable natural sources and nonrecurring events related to any kind of source of particulate matter. Section 2.4 further provides that data from such events may be discounted (i.e., EPA may compensate for such data or exclude such data entirely from decisions regarding an area). Consequently, Appendix K contemplates that data from "exceptional events" may be discounted, including, but not limited to, data due to emissions from uncontrollable natural events.

On the other hand, section 188(f), which was enacted by Congress in the same amendments as section 107(d)(4)(B)(ii), discusses PM-10 natural sources in terms of whether they are "anthropogenic" or "nonanthropogenic." It does not discuss such sources or emissions in the terms of Appendix K (i.e., it does not discuss matters in terms of exceptional or nonexceptional events, nor does it distinguish between uncontrollable and controllable natural sources). In general, section 188(f) provides that EPA may waive certain requirements where EPA determines that anthropogenic sources do not contribute significantly to a violation of the PM-10 standard, and that EPA may waive a specific attainment date if it determines that the contribution of nonanthropogenic emissions to a violation is demonstrated to be "significant."

As Congress, without express exception, directed the use of Appendix K in determining whether areas were attaining the PM-10 standard, EPA believes it is reasonable to interpret section 188(f) as not limiting the use of that appendix, provided that such an interpretation does not render section 188(f) invalid. The EPA believes that the approach taken in this natural events policy does not do that, and that it represents a reasonable harmonization of these provisions of the Act and the language of Appendix K regarding exceptional events.

Under EPA's revised interpretation, section 188(f) continues to have force and effect. As section 188(f) addresses the issues in terms of "anthropogenic" and "nonanthropogenic" sources, not in terms of exceptional events (which are defined in Appendix K as both uncontrollable natural events and nonrecurring events from both natural and other sources), it is possible to view the waivers of section 188(f) as being potentially applicable only to areas that are designated nonattainment because the data do not qualify for adjustment under Appendix K. For such areas, it may be reasonable and appropriate to grant waivers from some requirements that simply do not make sense in light of the nature of the sources generating the PM-10 problem in the area. Thus, EPA's new interpretation does not render section 188(f) meaningless. Consequently, EPA believes that the exercise of its discretionary authority under Appendix K to discount or de-weight air quality data that are affected by uncontrollable natural sources of PM-10 is reasonable and appropriate.

EPA 1998 MEMORANDUM

NOTE TO DIRECTOR, AIR PROGRAM DIVISION, REGION I-X

DATE: August 17, 1998
SUBJECT: Implementation of the PM_{10} Natural Events Policy

Sometime ago, in a conference call on PM_{10} data issues, a question was raised about how active the EPA Regional Offices should be in reviewing and accepting natural event action plans (NEAP's) prepared by states in response to PM_{10}NAAQS violations caused by natural events. From my perspective, it is very important that the Regional Offices play an active role in implementing this policy. The role is different, however, than the regulatory oversight role played by EPA several years ago, when PM_{10} state implementation plans were submitted. The Natural Events Policy was developed in partnership with state air quality agencies and implementation should also be viewed as an equal partnership. The partners agreed to five guiding principles when developing the policy (see page 3 of the policy statement). The first is that, "Protection of public health is the highest priority of Federal, State, and local air pollution control agencies." This policy relies on review by the public (the fourth partner) to make sure we follow the first guiding principle.

It was never the intent of the policy to increase the administrative burden to the States. The policy is a recognition that there are events which we cannot control which can have significant health effects. The primary purpose of the policy was not to hold states accountable for NAAQS violations due to these natural events while at the same time holding them accountable for mitigating public health impacts to the extent possible.

In view of the above, I am concerned that some states are raising the issue of burdensome oversight process of NEAP's and of excessive documentation of the event requirements being imposed upon them. The documentation process was never meant to be a high hurdle test, but was meant to be one that was clearly credible and could withstand public scrutiny and legal challenge. For the types of events covered in this policy, it was anticipated that news articles and supporting weather reports could be adequate.

I would encourage you to discuss these issues with your staff with regard to EPA's oversight role and make sure that we are complying with the intent of the policy and are not trying to revert to an approval/disapproval role on the N EAP's. My staff have provided in the attachment analysis of some of the key guiding principles which you and your staff may find helpful in implementing the policy.

I would also encourage you to discuss with your states the need to have credible documentation of the events as well as adequate NEAP's in place. Failure to do so on their part will seriously jeopardize the policy itself.

I hope this will be helpful to you. Please call me at 919/54105505 if you have any questions.

Sally L. Shaver

Attachment

ATTACHMENT

Implementing the Natural Events Policy involves the following actions by state agencies, EPA, and the general public.

Flagging and Documentation of Natural Events Data

Guiding principles 2 and 3: "The public must be informed whenever the air quality in an area is unhealthy. All valid ambient air quality data should be submitted to the EPA Aerometric Information Retrieval System and made available for public access."

State Actions

- Flag particulate matter (PM) data caused by natural events and document clear causal relationships between the measured values and the events. Show that the PM NAAQS would not have been exceeded if the event had not occurred (values normally below 150 $\mu g/m^3$). Document the sources of PM contributing to the event. Was the smoke from wildfires or fires managed to achieve resource benefits (fires managed within a prescription)? Did the dust entrained by high winds originate from anthropogenic sources (areas disturbed by human actions) or natural areas?

- Compare the conditions of high wind events with those determined to be likely to lead to high winds overcoming best available control measures (BACM) at anthropogenic sources. States are to identify the conditions (soil type, precipitation, wind speed, etc.) that can lead to high winds overcoming BACM in each region or subregion of the state.

- Send a copy of the documentation to the EPA Regional Office no later than 180 days from the time of the event.

EPA Regional Office Actions

- Review flagged data and the documentation. Is the documentation convincing?

- Review the actions taken to get public review. Has the public been treated as a partner and given adequate opportunity to review and comment on the data?

- Review the states' identification of conditions that can lead to high winds overcoming BACM. Is it reasonable to consider dust generated from anthropogenic sources with BACM to be due to uncontrollable, natural events under these conditions? What are the bases for the determinations?

Public Actions

- Review the states' treatment of air quality data, especially data above the NAAQS.

- Review the conditions identified as likely to lead to high winds overcoming BACM.

Best Available Control Measures

Guiding principle 5: "Emission controls should be applied to sources that contribute to exceedances of the PM_{10}NAAQS when those controls will result in fewer violations of the standards."

State Actions

- Require BACM to be implemented at contributing anthropogenic sources of dust within three years of the first PM NAAQS violation due to high wind events. Anthropogenic sources of dust that become airborne during high wind events must be controlled with BACM to be included under the Natural Events Policy.

- Document BACM determinations.

- Secure firm commitments and schedules for BACM implementation.

EPA Regional Office Actions

- Review the list of anthropogenic sources documented as contributing to high wind events.

- Review the BACM requirements for those sources. Are the measures comparable to other BACM determinations for those source categories? Was BACM implemented before the PM NAAQS was violated? Is there a firm schedule for implementing BACM at those sources where it has not already been implemented? Is there a firm schedule for developing and implementing BACM at those sources for which BACM has not been defined?

- Look at the opportunity for public review. Was the public given adequate opportunity to review and comment on BACM determinations and implementation schedules?

Public Actions

- Look for anthropogenic sources of dust documented as contributing to high wind events.

- Review requirements for BACM for anthropogenic sources of dust.

- Review BACM implementation schedules.

Natural Events Action Plans

Guiding principle 4: "State and local agencies must take appropriate reasonable measures to safeguard public health regardless of the source of PM10 emissions."

State Actions

- Develop a natural event action plan (NEAP) for areas where natural events have caused PM NAAQS violations, within 18 months of the violation. Include the five requirements of a NEAP listed in the policy. Confer with the EPA Regional Office and all other stakeholders in developing the NEAP.

- Include documented agreements with stakeholders, implementation schedules (especially for commitments to take action), and identify the parties responsible for carrying out actions.

- Seek and respond to public review and comment on the NEAP.

- Submit final NEAP's to the EPA Regional Office for review and comment.

EPA Regional Office Actions

- Discuss the goals, objectives and expectations of a NEAP with the State before it is developed.

- Monitor the public review process.

- Review and comment on the NEAP. Are the implementation schedules reasonable? Are the guiding principles of the policy being followed? Are "appropriate reasonable measures to safeguard public health" being taken?

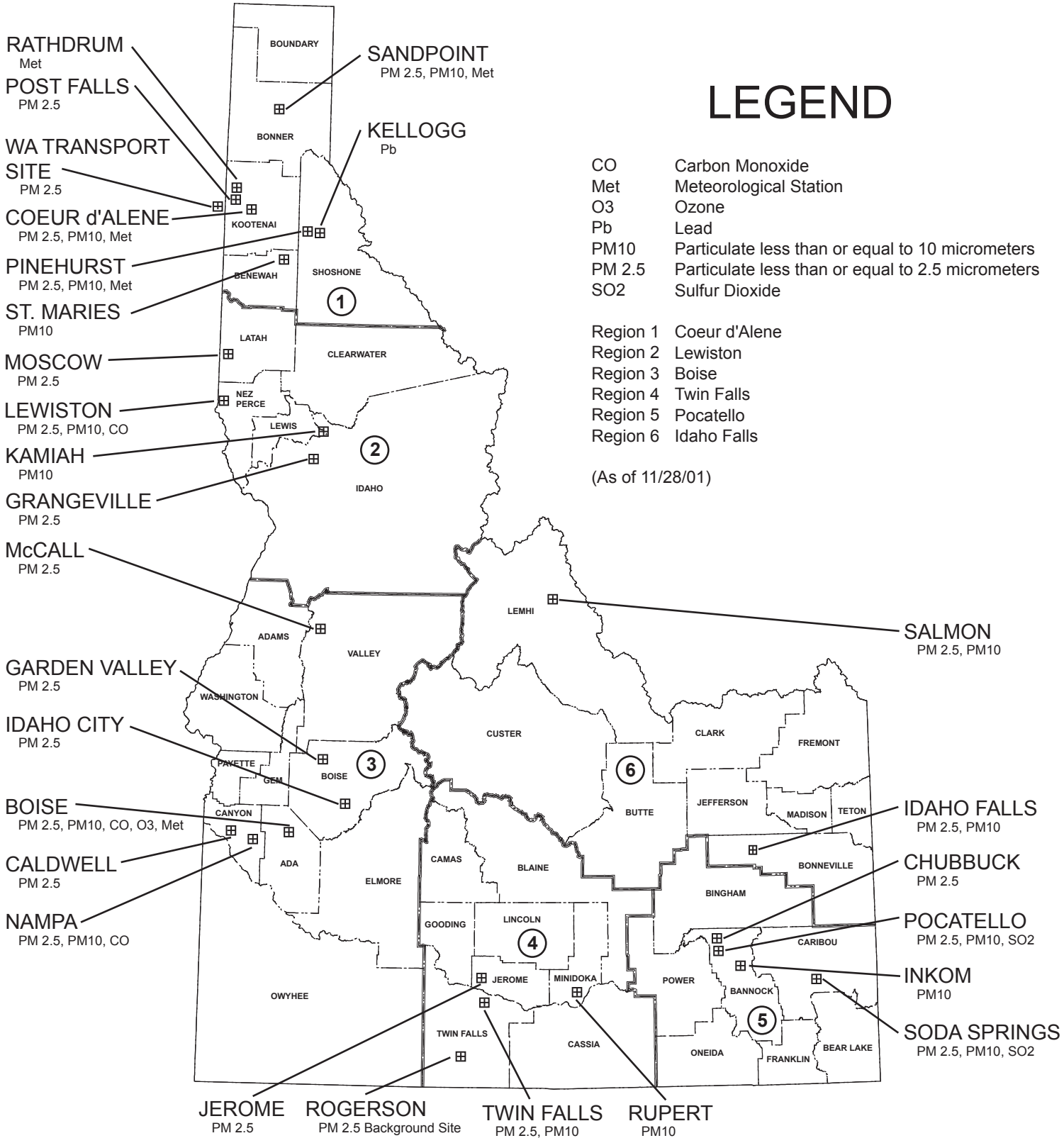
- Notify the governor of the state that the area with a NAAQS violation should be redesignated as nonattainment, if the state fails to submit an adequate NEAP.

Public Actions

- Review and comment on the NEAP

Appendix B

2001 Idaho Air Monitoring Network



LEGEND

CO	Carbon Monoxide
Met	Meteorological Station
O3	Ozone
Pb	Lead
PM10	Particulate less than or equal to 10 micrometers
PM 2.5	Particulate less than or equal to 2.5 micrometers
SO2	Sulfur Dioxide

Region 1	Coeur d'Alene
Region 2	Lewiston
Region 3	Boise
Region 4	Twin Falls
Region 5	Pocatello
Region 6	Idaho Falls

(As of 11/28/01)

APPENDIX C:
OUTREACH MATERIALS

STATE OF IDAHO

DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton, Boise, ID 83706-1255, (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

Tuesday, August 29, 2000

Daily Smoke Report – Central Idaho

Joint report from the Department of Environmental Quality and the Salmon District 7 Health Office

Medical Admissions
5 cases of upper respiratory symptoms on Monday in Salmon
1 case (fire fighter) sinusitis on Monday in McCall
About 8 cases of upper respiratory symptoms last week in Riggins

Anyone having to remain indoors due to respiratory problems from smoky conditions may obtain help acquiring fans or air purifiers. Please call your county emergency coordinator at your local county office. If you cannot identify the emergency coordinator through the county, ask local law enforcement.

Visual Observations
As of This Morning:

Challis:	2 miles – Unhealthy
Leadore:	3½-4 miles – Moderate to Unhealthy for Sensitive Groups
McCall:	2 miles – Unhealthy
North Fork:	2½-3 miles – Unhealthy for Sensitive Groups
Riggins:	4½-5 miles – Moderate
Whitebird:	10 miles – Good

Salmon Air Quality Data 7:00am
Past 24-Hours – Unhealthy
Past 8-Hours – Unhealthy
Past 1-Hour – Unhealthy for Sensitive Groups

"What is the air quality in your area?"
Visit the DEQ web site at**:** www.deq.state.id.us/air/air1.htm
*The Idaho Falls Area, which includes Salmon, will be updated in the afternoon everyday for air quality conditions. Other areas will be updated as needed***.**

Weather/Smoke Forecast *(Provided by Dave Levinson, Meteorologist for the Missoula Monitoring Unit)*
Discussion of current smoke conditions:
Clear and cool conditions overnight Monday generated morning inversions in the valleys of central Idaho, trapping smoke in preferred locations along the Salmon River corridor and tributaries. This morning's visible satellite imagery shows that significant smoke has settled in and around Salmon and Challis, and smoke also was transported westward on drainage winds down the Salmon River towards Riggins and McCall. A large plume is currently transporting

mid-level smoke out of the central Idaho area toward the east-northeast into Montana, with this plume visible for several hundred miles downwind.

Tuesday (Aug. 29):
Nocturnal inversions formed overnight, trapping smoke throughout central Idaho and the Salmon/Challis area. The light and variable winds throughout the state will slowly increase this afternoon to westerly and southwesterly flow, 5-15 knots, with stronger winds 10-20 knots expected in the upper Snake River Valley. A fast moving upper-level short-wave trough is forecasted to move into northern Idaho by Tuesday evening. Smoke dispersion is expected to increase from poor in the morning to moderate by this afternoon, as the surface and transport winds increase throughout the state.

Wednesday (Aug. 30):
An upper-level trough is forecasted to pass the state on Wednesday, increasing the winds and improving smoke dispersion. The moisture associated with this system is expected to remain in the panhandle area and near the Canadian border. Wind speeds are forecasted to increase by Wednesday afternoon throughout the state, as this system moves eastward into Montana by mid-day. Smoke dispersion should improve from poor on Wednesday morning to good by Wednesday afternoon, improving air quality and visibilities.

Thursday-Saturday Extended (Aug. 31-Sept1):
A weather change is on hand for later this week into the weekend. A large upper-level low-pressure system is forecasted to begin moving onshore off the northeast Pacific late in the day on Thursday, bringing an increase in moisture over northern Idaho. This moisture, along with monsoon moisture moving up from the south, will increase the chance for precipitation over the area Thursday and Friday. Smoke dispersion should improve from moderate on Thursday morning to good by Thursday afternoon. Further improvement in the dispersion is expected later in the week, from good on Thursday to excellent by Saturday, as the upper-level trough approaches Idaho from the west. Current model runs bring this trough into the state on Saturday, generating some precipitation, dispersing smoke and improving air quality over the entire region.

Current Open Burning Restrictions:
Due to the potential for accumulation of smoke from wildfires, DEQ has issued a Stage 1 Air Pollution Forecast, which bans open, outdoor burning of any kind, for the following 20 counties in Idaho: Ada, Adams, Blaine, Boise, Camas, Canyon, Clearwater, Custer, Elmore, Fremont, Gem, Idaho, Latah, Lemhi, Lewis, Nez Perce, Payette, Teton, Valley, and Washington. All outdoor burning is prohibited in these areas, including areas within incorporated cities and on private lands. Open burning includes all forest, range, agricultural, and outdoor residential burning.

In addition, the Idaho Department of Lands has suspended all open burning permits for lands outside of incorporated city limits in Idaho due to critical burning conditions. Normally permits are required for all open burning during the period May 10 to October 20.

If you have more information about smoke impacts in your area, please call the air quality section of your local DEQ office and we will try to include in this report.

STATE OF IDAHO

DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton, Boise, ID 83706-1255, (208) 373-0502

Dirk Kempthorne, Governor
C. Stephen Allred, Director

ACTIONS TO TAKE WHEN SMOKE IS:

➔ **Good** (can see 10 miles or more*) - *No cautionary statements.*

➔ **Moderate** (can see 4 to 9 miles*) - *Extremely sensitive people should consider limiting prolonged outdoor exertion.*

➔ **Unhealthy for Sensitive Groups** (can see 2½ to 3 miles) - *People with respiratory or heart disease, the elderly, and children should limit prolonged exertion.*

➔ **Unhealthy** (can see ¼ to 2 miles*) - *People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion. Everyone else should limit prolonged exertion.*

➔ **Very Unhealthy** (can see 1 mile*) - *People with respiratory or heart disease, the elderly, and children should avoid any outdoor activity. Everyone else should avoid prolonged exertion.*

➔ **Hazardous** (can see ¾ mile or less*) - *Everyone should avoid any outdoor exertion, and people with respiratory or heart disease, the elderly, and children should remain indoors.*

*** Face away from the sun and look for targets at known distances. Visible range is that point at which even high contrast objects totally disappear.**

FOR SMOKY CONDITIONS DOCTORS ALSO RECOMMEND:

- ✓ Use air conditioning in cars and homes
- ✓ Keep windows and doors closed
- ✓ For healthy individuals, if you must go outdoors, use a loose scarf or painters mask over mouth and nose to partially filter the air
- ✓ Use an indoor humidifier for breathing relief
- ✓ SEEK MEDICAL TREATMENT if you experience uncontrolled coughing, wheezing, or choking, or if breathing difficulty does not subside indoors

CONTACT INFORMATION

- Local Department of Environmental Quality Regional Office
- Local District Health Office
- Contact the County Emergency Coordinator through your local county office or law enforcement for help obtaining indoor fans or air purifiers.

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C. Stephen Allred, Director

August 23, 2000 - Revised

In the absence of real-time ambient air quality monitoring data, visibility range estimates are recommended for determination of qualitative air quality conditions. The following table associating visibility ranges with air quality conditions, health effects, and cautionary statements was developed from empirical data gathered by Montana DEQ.

Conditions	Health Effects	Cautionary Statements	Visibility Ranges*
Good	None	None	10 miles and up
Moderate	Possibility of aggravation of heart or lung disease among persons with cardiopulmonary disease and the elderly.	Extremely sensitive people should consider limiting prolonged outdoor exertion.	4 to 9 miles
Unhealthy for Sensitive Groups	Increasing likelihood of increased respiratory symptoms in children and adults, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.	People with respiratory or heart disease, the elderly, and children should limit prolonged exertion.	2½ miles to 3 miles
Unhealthy	Increasing respiratory symptoms in children and adults, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.	People with respiratory or heart disease, the elderly, and children should avoid prolonged exertion; everyone else should limit prolonged exertion.	1¼ miles to 2 miles
Very Unhealthy	Significant increase in respiratory symptoms in children and adults, aggravation of heart disease and premature mortality in persons with cardiopulmonary disease and the elderly.	People with respiratory or heart disease, the elderly, and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.	1 mile
Hazardous	Serious risk of respiratory symptoms in children and adults, aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly.	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly, and children should remain indoors.	¾ miles or less

✶ Face away from the sun and look for targets at known distances. Visible range is that point at which even high contrast objects totally disappear.

NEWS RELEASE

For immediate release
August 25, 2000

Department of Environmental Quality issues a ban on all open burning for 20 counties in Idaho due to smoke impacts from wildfires

BOISE – Smoke from wildfire activity has resulted in unhealthy air quality conditions in many areas throughout the state. While there are still areas in the state with air quality that have not yet reached unhealthful levels, meteorological forecasts do not promise any relief from continued buildup of smoke. Because air quality is expected to continue to degrade, the Department of Environmental Quality (DEQ) is issuing a Stage 1 Air Pollution Forecast for twenty counties in Idaho. Under Stage 1, there shall be no open burning of any kind in any part of these counties. Open burning includes all forest, range, agricultural, and outdoor residential burning.

The DEQ issued burn ban is applicable for any portion of the following counties: Ada, Adams, Blaine, Boise, Camas, Canyon, Clearwater, Custer, Elmore, Fremont, Gem, Idaho, Latah, Lemhi, Lewis, Nez Perce, Payette, Teton, Valley, and Washington.

Recent unsettled weather has resulted in some relief from the heavy smoke concentrations in some areas but, in many areas throughout the state, unhealthy air quality conditions continue to persist. Cyclic stagnant weather patterns and significant fire activity are expected to continue to cause degraded air quality conditions. Since early July, meteorological conditions and dry fuels have resulted in unprecedented fire activity which have caused hazardous air quality conditions in many parts of Idaho. Due to extreme fire behavior, very little containment of existing and new fires has been possible. These conditions are expected to continue until normal, wet fall weather conditions occur. DEQ believes that its open burning ban is necessary to minimize the degradation of air quality and to protect public health.

Particulate matter can increase susceptibility in people with existing heart or lung diseases -- such as asthma, chronic obstructive pulmonary disease, or congestive heart disease -- and can aggravate existing medical conditions. The elderly are also sensitive to particulate matter exposure. When exposed to particulate matter, children and people with existing lung disease may not be able to breathe as deeply or vigorously as they normally would, and they may experience symptoms such as coughing and shortness of breath. Individuals are advised to seek medical treatment if they have uncontrolled coughing, wheezing or choking, or if breathing difficulty does not subside indoors.

The DEQ will continue to monitor air quality and meteorological conditions in all areas of concern. Local air quality information can be found on DEQ's webpage under "What is the air quality in your area?" located at the following Internet address: www.deq.state.id.us/air/air1.htm. DEQ will remove the burn ban when favorable meteorological conditions and fire containment occur.

Contact your local DEQ office, fire agency, or district health department for additional information.

Division of Health - Bureau of Environmental Health & Safety

May 2001

IDAHO DEPARTMENT OF HEALTH & WELFARE

GUIDELINES FOR IMPROVING INDOOR AIR QUALITY DURING THE FIRE SEASON

When wildland fires and controlled burns affect outdoor air quality, indoor air quality can also be impacted. The following recommendations are provided to help protect indoor air quality during outdoor fire events. For determining outdoor conditions, see the attached table provided by the Department of Environmental Quality.

All Homes or Buildings

- Close all windows and doors to the outside.
- Shut off non-essential exhaust fans to reduce the amount of outside air being pulled inside.
- Minimize foot traffic in and out of the building.
- Keep window or through-the-wall air conditioning units in the re-circulation mode rather than bringing in air from the outside.

Homes/Buildings with Filtered Air

Upgrade filters to the highest efficiency possible for the system. The higher the filter efficiency rating, the better protection the filter will provide. Filters are available with a layer of activated carbon (charcoal) that will also remove smoke odors.

The most desirable filter set-up (in order of installation) is a pre-filter, carbon filter, High Efficiency Particulate Air (HEPA) filter. Since the space provided for filters in most ventilation systems is limited, a combination HEPA and activated carbon filter may be the best option. Filters should be checked often for dirt build-up.

For filtered air systems with outside air intakes, reducing outside air volume may improve filter life, but do not close outside air intakes completely.

When replacing existing filters with high efficiency filters, you need to know the maximum filter efficiency that your system will handle; otherwise, system damage could occur. If in doubt when performing any recommended changes to your existing systems, consult your local heating and cooling contractor or the equipment manufacturer.

HOMES/BUILDINGS WITHOUT FILTERED AIR

Homes and Small Offices

Use portable air filtering units. Look for HEPA rated units. Keep the pre-filter clean to protect the much more expensive internal HEPA filter. Ion Generators and Ozone Generators are NOT recommended.

Large Facilities

Retrofit the building with portable forced air systems with filtration. Total capacity of all fans used will be determined by the number of occupants. Twenty cubic feet per minute (CFM) of outside air per occupant is recommended. Use the same filter guidelines as previously described.

Typically, these systems will require temporary duct entries into the building. When placing duct entries, do not obstruct exits. Also, check equipment and extension cords frequently to ensure systems do not overheat.

Special attention and care need to be given to those spaces which generate hazardous and/or air contaminants that rely on general dilution ventilation or special ventilation needs, such as:

- Chemistry and Biology labs
- Wood and Paint shops
- Copy and Printing shops
- Welding and Auto shops
- Solvent Tanks

These areas should be dealt with on a case by case basis. If you have questions about your system, contact your local heating and cooling contractor or the equipment manufacturer.

Resources

- For questions regarding health effects of indoor air quality, contact the Idaho Bureau of Environmental Health and Safety at 208-334-0606.
- For questions regarding outdoor air quality, contact the Idaho Department of Environmental Quality (IDEQ) at 208-373-0502 or the IDEQ Air Quality Hotline at 208-236-6173.
- For questions regarding wildland fire status, contact the National Interagency Fire Center (NIFC) at 208-387-5050.
- IDEQ Daily Air Quality Report Website: http://www.deq.state.id.us/air/dailyreports/aqi_report_bro.shtml

Wildfire Smoke and Your Health

What's in smoke from a wildfire?
Smoke is made up small particles, gases and water vapor. Water vapor makes up the majority of smoke. The remainder includes carbon monoxide, carbon dioxide, nitrogen oxide, irritant volatile organic compounds, air toxics and very small particles.

Is smoke bad for me?
Yes. It's a good idea to avoid breathing smoke if you can help it. If you are healthy, you usually are not at a major risk from smoke. But there are people who are at risk, including people with heart or lung diseases, such as congestive heart disease, chronic obstructive pulmonary disease, emphysema or asthma. Children and the elderly also are more susceptible to smoke.

What can I do to protect myself?

- Many areas report EPA's Air Quality Index for *particulate matter, or PM.* PM (tiny particles) is one of the biggest dangers from smoke. As smoke gets worse, that index changes -- and so do guidelines for protecting yourself. So listen to your local air quality reports.

- Use common sense. If it looks smoky outside, that's probably not a good time to go for a run. And it's probably a good time for your children to remain indoors.

- If you're advised to stay indoors, keep your windows and doors closed. Run your air conditioner, if you have one. Keep the fresh air intake closed and the filter clean.

- Help keep particle levels inside lower by avoiding using anything that burns, such as wood stoves and gas stoves – even candles. And don't smoke. That puts even more pollution in your lungs – and those of the people around you.

- If you have asthma, be vigilant about taking your medicines, as prescribed by your doctor. If you're supposed to measure your peak flows, make sure you do so. Call your doctor if your symptoms worsen.

How can I tell when smoke levels are dangerous? I don't live near a monitor.
Generally, the worse the visibility, the worse the smoke. In Montana and Idaho, the Departments of Environmental Quality is uses visibility to help you gauge wildfire smoke levels. For a guide, go to http://www.deq.state.mt.us/FireUpdates/index.asp and click on the link labeled "Forest Fire Smoke Categories." For Idaho go to http://www.deq.state.id.us/air/dailyreports/aqi_visrange.htm.

How do I know if I'm being affected?
You may have a scratchy throat, cough, irritated sinuses, headaches, runny nose and stinging eyes. Children and people with lung diseases such as asthma may find it difficult to breathe as deeply or vigorously as normally, and they may cough or feel short of breath. People with diseases such as asthma or chronic bronchitis may find their symptoms worsening.

Should I leave my home because of smoke?
The tiny particles in smoke do get inside your home. If smoke levels are high for a prolonged period of time, these particles can build up indoors. If you have symptoms indoors (coughing, burning eyes, runny nose, etc.), talk with your doctor or call your county health department. This is particularly important for people with heart or respiratory diseases, the elderly and children.

Are the effects of smoke permanent?
Healthy adults generally find that their symptoms (runny noses, coughing, etc.) disappear after the smoke is gone.

Do air filters help?
They do. Indoor air filtration devices with HEPA filters can reduce the levels of particles indoors. Make sure to change your HEPA filter regularly. Don't use an air cleaner that works by generating ozone. That puts more pollution in your home.

Do dust masks help?
Paper "comfort" or "nuisance" masks are designed to trap large dust particles -- not the tiny particles found in smoke. These masks generally will not protect your lungs from wildfire smoke.

How long is the smoke going to last?
That depends on a number of factors, including the number of fires in the area, fire behavior, weather and topography. Smoke also can travel long distances, so fires in other areas can affect smoke levels in your area.

I'm concerned about what the smoke is doing to my animals. What can I do?
The same particles that cause problems for people may cause some problems for animals. Don't force your animals to run or work in smoky conditions. Contact your veterinarian or county extension office for more information.

***How* does smoke harm my health?**
One of the biggest dangers of smoke comes from *particulate matter* -- solid particles and liquid droplets found in air. In smoke, these particles often are very tiny, smaller than 2.5 micrometers in diameter. How small is that? Think of this: the diameter of the average human hair is about 30 times bigger.

These particles can build up in your respiratory system, causing a number of health problems, including burning eyes, runny noses and illnesses such as bronchitis. The particles also can aggravate heart and lung diseases, such as congestive heart failure, chronic obstructive pulmonary disease, emphysema and asthma.

Where is the smoke coming from?
It depends on where you are. To find out about smoke in your area, check with your local smoke management unit or health department. In Montana and Idaho, call 406-329-4905. On the Internet, go to http://www.fs.fed.us/r1/fire/nrcc/Smoke_web_pages/intro.htm

What about firefighters?
Firefighters do experience short-term effects of smoke, such as stinging, watery eyes, coughing and runny noses. Firefighters must be in good physical condition, which helps to offset adverse effects of smoke. In addition to being affected by particles, firefighters can be affected by carbon monoxide from smoke. A recent Forest Service study showed a very small percentage of firefighters working on wildfires were exposed to levels higher than occupational safety limits for carbon monoxide and irritants. If you are working on a fire and you're concerned about your health, see the medical unit or contact your safety officer. If you're not working on a fire, call your doctor.

Why can't the firefighters do something about the smoke?
Firefighters first priorities in fighting a fire are, by necessity, protecting lives, protecting homes and containing the wildfire. Sometimes the conditions that are good for keeping the air clear of smoke can be bad for containing fires. A windy day, for example, helps smoke disperse. But it can help a fire spread.

Firefighters do try to manage smoke when possible. As they develop their strategies for fighting a fire, firefighters consider fire behavior and weather forecasts, topography and proximity to communities – all factors than can affect smoke.

Why doesn't it seem to be as smoky when firefighters are working on prescribed fires.
Land managers are able to plan for prescribed fires. They get to choose the areas they want to burn, the size of those areas and the weather and wind conditions that must exist before they begin burning. This allows them to control the fire more easily and limit its size. Those choices don't exist with wildfires. In addition, wildfires that start in areas that haven't been managed with prescribed fire often have more fuel, because vegetation in the forest understory has built up, and dead vegetation has not been removed.

How do you measure the quality of the air?
Local air agencies (or sometimes federal land managers) use monitors to measure the amount of particulates in the air. That amount, measured in micrograms per cubic meter, is compared to a national index designed to protect public health.

Will the smoke be this bad every summer?
That depends on where you live and the weather each year. If you live in an area where fire has always been part of the ecosystem, you can expect fire and smoke. The amounts will depend on weather and the amount of fuel (trees, brush, etc.) available to be burned. You can protect yourself and your property by following good fire prevention measures. But we never will eliminate fire and smoke from these natural systems.

This document was prepared by the Air Program, U.S. Forest Service – Northern Region, with assistance from the Office of Air Quality Planning & Standards in the US Environmental Protection Agency. For more information, call 406-329-3493. August 2000.

Idaho Department of Environmental Quality • Type Date Here • For Immediate Release

Air Quality Advisory

Date:

Location:

Action:

Cause of Air Pollution:

Category:

Pollutant:

Forecast:

Next Update:

Contact:

What is the Air Quality Index?

The Air Quality Index (AQI) was developed by the federal Environmental Protection Agency (EPA) to assess air quality and the potential health effects of air pollutants.

The AQI* is calculated daily for various air pollutants, including carbon monoxide and particulate matter. (Sources of particulate matter include road dust from cars, smoke, and emissions from other sources.)

The index ranges from 0 to 500. In most cases, an AQI of 100 means that the federal standard or limit has been reached.

The AQI consists of six categories, ranging from good to hazardous, and prescribes precautions for each category to help protect citizens from potential health impacts of air pollution.

* Typically, from the most recent 24 hours of data. Visibility estimates may be used where monitoring data is not available.

AQI	Category	Health Impacts	
		$PM_{2.5}$	PM_{10}
0-50	**Good**	**None**	None
51-100	Moderate	**None**	**None**
101-150	Unhealthy for Sensitive Groups	People with respiratory or heart disease, the elderly, and children should *limit* prolonged exertion.	People with respiratory disease, such as asthma, should *limit* outdoor exertion.
151-200	Unhealthy	People with respiratory or heart disease, the elderly, and children should *avoid* prolonged exertion; everyone else should *limit* prolonged exertion.	People with respiratory disease, such as asthma, should *avoid* outdoor exertion; everyone else, especially the elderly and children, should *limit* prolonged outdoor exertion.
201-300	Very Unhealthy	People with respiratory or heart disease, the elderly, and children should *avoid* any outdoor activity; everyone else should *avoid* prolonged exertion.	People with respiratory disease, such as asthma, should *avoid* any outdoor activity; everyone else, especially the elderly and children, should *limit* outdoor exertion.
301-500	Hazardous	Everyone should *avoid* any outdoor activity; people with respiratory or heart disease, the elderly, and children should *remain indoors*.	Everyone should *avoid* any outdoor exertion; people with respiratory, such as asthma, should *remain indoors.*
$PM_{2.5}$ = fine particles up to 2.5 micrometers in diameter; PM_{10} = coarse particles up to 10 micrometers in diameter.			
Sensitive groups include children, the elderly, those with existing health conditions, and people who have high exposure (those who work, exercise, or spend extensive time outdoors).			

APPENDIX D:
RESOURCES

Websites

Idaho State

http://www2.state.id.us/adm/adminrules/rules/IDAPA58/58INDEX.HTM
Idaho DEQ air rules

http://www.deq.state.id.us/air/air1.htm
Idaho real-time air quality data

http://www.deq.state.id.us/air/wildfire.htm
Links to fire potential assessments and current wildland information

http://www.smokemu.org
MT/ID Airshed Group Monitoring Unit (prescribed fire reporting and restrictions)

http://www.fs.fed.us/r1/fire/nrcc/Smoke_web_pages/intro.htm
MT/ID Smoke Management Coordination (wildland fire use)

http://www.agri.state.id.us/Crop/crdinfo.htm
Crop Residue Disposal Smoke Management Program

http://www.northidahofarmers.org/smoke_management.htm
Northern Idaho Farmers Association smoke management program

http://www2.state.id.us/dhw/BEHS/behs_frame.htm
Idaho Division of Health

- Air Pollution and Your Health
- Guidelines for Improving Indoor Air Quality During Fire Season

http://www2.state.id.us/bds/default.htm
Idaho Bureau of Disaster Services

http://www.idoc.state.id.us
Idaho Dept. of Commerce

http://www2.state.id.us/lands/index.htm
Idaho Dept. of Lands

Surrounding States

http://www.deq.state.mt.us/FireUpdates/index.asp
MT smoke management

http://ndep.state.nv.us/baq/smoke.htm
NV smoke management program

www.deq.state.or.us/aq/aqi_home.htm
OR air quality

http://www.odf.state.or.us/fireprot.htm
OR smoke management program

http://www.utahsmp.net
Utah smoke management

http://www.eq.state.ut.us/EQAMC/api.htm
UT air quality

http://airr.ecy.wa.gov/Public/aqn.html
WA air quality

http://www.firesmokehealth.org
WA Dept. of Environmental Health Fire, Smoke, and Health

http://smokey.ce.wsu.edu
WA State University Palouse smoke information

EPA

http://www.epa.gov/airnow/statedata.html
State real-time air quality data

http://www.epa.gov/airs/nonattn.html
Nonattainment areas

http://www.epa.gov/airsweb
EPA AIRS database

http://www.epa.gov/ttncaaa1/faca/pbissu.html
Wildland Fire Issues Group

http://www.epa.gov/ttn/oarpg/t1pgm.html
EPA policy and guidance documents

http://www.epa.gov/ttn/oarpg/naaqsfin
New ozone and particulate matter standards

Fire Related

http://www.nfpa.org/Home/index.asp
National Fire Protection Association

http://www.stateforesters.org
National Association of State Foresters

http://www.nifc.gov/fireinfo/nfn.html or http://www.nifc.gov/news/sitreprt.pdf
National fire activity

http://www.nifc.gov
Fire maps

http://www.fireplan.gov
National Fire Plan

http://www.epa.gov/ttncaaa1/faca/pbissu.html
Wildland Fires Issues Group

http://www.fire.org
USFS fire management tools

http://www.fs.fed.us/r6/aq
USFS national air resources program

http://www.fs.fed.us/rl/gallatin/air/guidance.shtml
USFS Northern Region air resources program

http://www.icbemp.gov
ICBEMP reports

http://www.nifc.doi.gov/joint_fire_sci/index.html
Joint Fire Science Program

Public Education and Outreach

http://www.wrapair.org/forums/FEJF1/outreach_v2.PDF
Smoke management public outreach materials

http://www.nwcg.gov
NWCG Wildland Fire Education

http://www.keepidahogreen.org
Keep Idaho Green

http://www.firewise.org
Wildfire protection information for fire prone areas of North America

Weather and Satellite

http://www.fs.fed.us/r4/rsgis_fire/index.html
Advanced Very High Resolution Radiometer (AVHRR) Satellite images

http://www.osei.noaa.gov/Events/Fires/US_Northwest
Operational Significant Event Imagery (OSEI) satellite imagery in northwest U.S.

http://www.wrh.noaa.gov/wrhq/nwspage.html
NWS visible imagery

http://www.wrh.noaa.gov/Missoula/nwsomso.sfcrgl.html
Surface observations

http://www.wrh.noaa.gov/wrhq/nwspage.html
NWS weather forecast offices

http://www.aos.wisc.edu
Weather forecasts

http://www.atmos.washington.edu/mm5rt/indexall.html
Ventilation index

http://www.dri.edu/Programs/CEFA
Program for Climate, Ecosystem and Fire Applications

http://www.wrh.noaa.gov/Boise/current.htm
Idaho NWS Automated Surface Observation System Sites

Webcams

http://ktvb.com/skycam and http://www.wrh.noaa.gov/Boise/cams.shtml
Bogus basin, ID

http://ktvb.com/skycam and http://www.wrh.noaa.gov/Boise/cams.shtml
Boise, ID

http://www.wrh.noaa.gov/Boise/cams.shtml
Burley, ID

http://www.lctoday.net/weatherscope.htm
Lewiston, ID

http://www.wrh.noaa.gov/Boise/cams.shtml
McCall, ID

http://ktvb.com/skycam
Melba, ID

http://www.uidaho.edu/webcams/index.html
Moscow

http://www.wrh.noaa.gov/Boise/cams.shtml
NE Oregon

http://www.lewisclarknw.com/WebCam.htm
Orofino, ID

http://www.pullman-wa.com/camera.htm
Pullman, WA

http://www.kxly.com/skycam
Spokane, WA

http://www.wrh.noaa.gov/Boise/cams.shtml
Stanley, ID

http://www.wrh.noaa.gov/Boise/cams.shtml
Twin Falls, ID

Interstate Smoke Management Contact List

LAST	FIRST	STATE*	TYPE	ORG	POSITION	EMAIL	PHONE	FAX
Ames	Laurie	ID	Field	DEQ	Clearwater Program	Lames@deq.state.id.us	208) 799-4370	(208) 799-3451
Arn	Mark	WY	Both	DEQ	Planning	Marn@state.wy.us	(307) 777-3782	(307) 777-5616
Beatty	Julia	Canada	Both		Environmental Section	Julia.Beatty@gems4.gov.bc.ca	(250) 354-6750	(250) 354-6367
Bell	Gary	Canada	Both		Air Resources Officer	Garry.bell@gems8.gov.bc.ca	(250) 354-6753	(250) 354-6367
Bernards	Frances	UT	Both	DEQ	Planning	Fbernard@deq.state.ut.us	(801) 536-4056	(801) 536-0085
Castillo	John	WA	Both	Tribe	Spokane		(509) 258-9744	
Coefield	John	MT	Both	DEQ	Meteorologist	Jcoefield@state.mt.us	(406) 444-5272	(406) 444-5275
Dong	Yayi	ID	Both	DEQ	Meteorologist	ydong@deq.state.id.us	(208) 373-0524	(208) 373-0143
Farsi	Farshid	ID	Both	Tribe	Shoshone-Bannock	Ffarsi@shoshonebannocktribes.com	(208) 478-3853	(208) 478-9736
Finneran	Brian	OR	Both	DEQ	Planning	Finneran.brian@deq.state.or.us	(503) 229-6478	(503) 229-5675
Glazier	Craig	ID	F/R	IDL	Forester	cglazier@cda.idl.state.id.us	(208) 666-8647	(208) 769-1534
Gray	Mark	WA	F/R	DNR	Forester	mark.gray@wadnr.gov	(360) 902-1754	(360) 902-1781
Habeck	Bob	MT	Both	DEQ	Planning	bhabeck@state.mt.us	(406) 444-7305	(406) 444-6836
Johnson	Sara	WA	Field	DOE	Air Quality Specialist	Sjoh461@ecy.wa.gov	(509) 456-4471	(509) 456-6175
Jones	Jon	WA	Field	DOE	Air Quality Specialist	Jojo461@ecy.wa.gov	(509) 456-6168	(509) 456-6175
Levinson	Dave	ID/MT	F/R	MU	Program Coord/Met.	dlevinson@fs.fed.us	(406) 329-4905	(406) 829-6901
McNeill	Dave	UT	AG	DEQ	Planning	dmcneill@deq.state.ut.us	(801) 536-4037	(801) 536-0085
Nolph	Shawn	WA	AG	DOE	Air Quality Specialist	Snol461@ecy.wa.gov	(509) 456-3121	(509) 456-6175
Nomie	Alfred	ID	F/R	Tribe	Coeur d'Alene		(208) 686-1800	(208) 686-1182
Payne	Curtis	NV	Both	BAQ	Planning	cpayne@govmail.state.nv.us	(775) 687-4670	(775) 687-6396
Potter	Darla	WY	Both	DEQ	Planning	dpotte@state.wy.us	(307) 777-7346	(307) 777-5616
Redline	Dan	ID	Both	DEQ	N ID Smoke Program	dredline@deq.state.id.us	(208) 769-1422	(208) 769-1404
Riley	Diane	ID	Both	DEQ	Planning	driley@deq.state.id.us	(208) 373-0214	(208) 373-0154
Russell	Jim	OR/WA	F/R	USFS	Air Resource Spec.	jrussell01@fs.fed.us	(503) 808-2956	(503) 808-2973
Saunders	Bob	WA	F/R	DOE	Planning	Rsau461@ecy.wa.gov	(360) 407-6888	(360) 407-7534
Simpson	Julie	ID	Both	Tribe	Nez Perce	Julies@enterprise.nezperce.org	(208) 843-7375	(208) 843-7378
Stender	Dick	WA	Field	DOE	Meteorologist	rste461@ecy.wa.gov	(360) 407-6889	(360) 407-7534
Thornburg	Curt	ID	Field	ISDA	Plant Industry	cthornbu@agri.state.id.us	(208) 332-8623	(208) 334-2283
Willis	Paul	Canada	Both		Air Quality Met	paul.willis@gems5.gov.bc.ca	(250) 489-8524	(250) 354-6367
Wood	Karen	WA	Field	DOE	Team Lead	kwoo461@ecy.wa.gov	(509) 456-5010	(509) 456-6175
Ziolko	Mike	OR	F/R	ODF	Meteorology Mgr	mziolko@odf.state.or.us	(503) 945-7452	(503) 945-7454
Zschaechner	Greg	UT	F/R	BLM	Program Coord.	Gzschaechner@worldnet.att.net	(801) 539-4151	(801) 536-0031, 0085

* Field = Agricultural field burning, F/R = Forest and range prescribed burning, Both = F/R and Field

APPENDIX E:
PUBLIC COMMENT

Public Notification

The NEP has the following requirements regarding public comment and stakeholder involvement:

> "The NEAP should be developed by the State air pollution control agency in conjunction with the stakeholders affected by the plan. Development of a NEAP for wildland fires should include input from Federal, State and private land managers in areas vulnerable to fire. Also, agencies responsible for suppressing fires and the citizens in the affected area should be involved in developing the plan."
>
> "The NEAP should be made available for public review and comment and …"
>
> "The State should also make the documentation of natural events and their impact on measured air quality available to the public for review."

The public comment period on the draft NEAP, initially from February 1 through February 22, was extended through March 8.

The public notice below was published in the six major newspapers in Idaho on February 1, 2002:

- Coeur d'Alene Press
- Idaho State Journal (Pocatello)
- Idaho Statesman (Boise)
- Lewiston Morning Tribune
- Post Register (Idaho Falls)
- Times News (Twin Falls)

NOTICE OF AVAILABILITY OF THE DRAFT
WILDFIRE NATURAL EVENTS ACTION PLAN

Notice is hereby given that the State of Idaho Department of Environmental Quality has scheduled a public comment period **from February 1 through February 22, 2002**. The purpose of the comment period is to receive comments from the public on the Draft Wildfire Natural Events Action Plan (Draft Plan) and supporting technical document.

The purpose of the Draft Plan is to protect public health in areas of Idaho during natural wildfire events and to fulfill the requirements of the Environmental Protection Agency (EPA). Development of this Draft Plan was prompted by violation of air quality standards during the natural wildfire event of 2000. This Draft Plan will apply statewide since wildfire smoke impacts could potentially occur anywhere within the state.

Areas that violate air quality standards are normally designated as "nonattainment areas." However, EPA has discretion to not designate areas as nonattainment when the violation is due to a natural event. If an area violates an air quality standard as a result of a natural event, the responsible agency must develop a Natural Events Action Plan to avoid a nonattainment designation. EPA recognizes that nonattainment designation of areas impacted by uncontrollable natural wildfire events would result in unreasonable planning requirements on traditional sources, i.e., power plants and vehicles. Rather, the Draft Plan provides reasonable actions to address air quality and public health impacts caused by natural events.

Written comments concerning the Draft Plan and supporting technical document are encouraged and **must be received by the Department by February 22, 2002**. Comments may be transmitted by ground mail, e-mail, or fax at the following address:

Diane Riley, Air Quality Analyst
Idaho Department of Environmental Quality
1410 North Hilton
Boise, Idaho 83706
Phone: (208) 373-0214
FAX: (208) 373-0154
E-Mail: driley@deq.state.id.us

Copies of the Draft Plan and supporting technical document are available at the Department's News and Notices Web site (http://www.deq.state.id.us/news/news1.htm) or from the above address.

If you have any questions regarding this notice, or the Draft Plan and supporting technical document, please contact Diane Riley at the Department's State Air Quality Division Office in Boise.

The notice was mailed to the general DEQ public comment notification list that includes Idaho's Representatives, Senators, Mayors, and special interest groups. The notice was also sent by email to an extensive list of potentially affected stakeholders (see **Table E-1**).

Table E-1: Email notification list for public and stakeholder review of draft NEAP.

Last Name	First Name	Organization
Adams	Steve	Salmon Health District 7
Apel	John	Craters of the Moon NM
Arn	Mark	WY DEQ
Beatty	Julia	Canada
Bell	Gary	Canada
Bernards	Frances	WY DEQ
Biggs	Tenna	Payette National Forest
Coefield	John	MT DEQ
Dether	Deirdre	Boise National Forest
Downey	Scott	R10 EPA
Farsi	Farshid	Shoshone-Bannock Tribe
Finneran	Brian	OR DEQ
Glazier	Craig	IDL
Gollnick-Waid	Krista	BLM
Goss	Tom	Southwest District Health Dept.
Graham	Bob	Bonners Ferry Mayor's Office
Gray	Mark	WA DNR
Guenther	Paul E.	North Central District Health Dept.
Habeck	Bob	MT DEQ
Horne	Richard	District 7 Health Dept.
Hugunin	Glenn	Salmon District 7 Health Dept
Jackson	Gary	Salmon-Challis National Forest
Johnson	Sara	WA DOE
Jones	Jon	WA DOE
Kopitzke	Mike	MT DNRC
Kriz	Dan	South Central District Health Dept.
Kuehn	Scott	Plumcreek
Levinson	Dave	MU
Lustig	Ken	Panhandle District Health Dept.
Marquist	Collen	WSU
Marugg	Ed	Southeastern District Health Dept.
McKee	Lynn	EPA-R10
McNeill	Dave	UT-Visibility
Meek	Clark	BDS
Nolph	Shawn	WA DOE
Nomie	Alfred	Coeur d'Alene Tribe
Payne	Curtis	NV DEQ Smoke Coordinator

Pence	Arleen	Idaho Forest Owners Association
Potter	Darla	WY DEQ
Rebarchik	Bob	US FWS
Russell	Jim	USFS - OR/WA
Satterfield	Keith	US FWS
Saunders	Bob	WA DOE
Simpson	Julie	Nez Perce Tribe
Simpson	Julie	Nez Perce Tribe
Snider	Mark	Idaho Governor's Office
Sonder	Marvin	Coeur d'Alene Tribe
Stender	Dick	WA DOE
Stevens	Kara	IDHW
Thornburg	Curt	ISDA-State Office
Turco	Tom N.	Central District Health Dept.
Williams	Jenifer	Nez Perce Tribe
Willis	Paul	Canada
Wood	Karen	WA DOE
Ziolko	Mike	OR ODF
Zschaechner	Greg	UT Smoke Coordinator (BLM)

Public Comment and Response

Appreciation goes to the following organizations for assistance with several sections during the development and review of the draft NEAP:

- Idaho Department of Commerce: Jerry Miller
- Idaho Bureau of Disaster Services: Clark Meek
- Idaho Department of Lands: Craig Glazier, Kirk David, and Kurt Houston
- USFS: Ann Acheson, Kathy Geyer-Hayes, and Deidre Dether

Written comments on the draft NEAP were received from the following persons and are summarized below:

1. Bob Graham, Bonners Ferry Mayor's Office
2. Gary Jackson, Salmon-Challis National Forest
3. Larry Lovitt, Payette National Forest

Bob Graham, Bonners Ferry Mayor's Office

1. On page two, you state that you are going to soon go to a target of $PM_{2.5}$. That may be a perfectly desirable target, but why shoot for that before you have really experienced the goal of PM_{10}? Also consider that this mention of showing that 2.5 is realistic, may be setting you and others up for a lawsuit when *2.5* is exceeded.

Response: *The speculative language regarding $PM_{2.5}$ monitoring data has been removed. FYI, the US Court of Appeals for the District of Columbia upheld the $PM_{2.5}$ NAAQS on March 26, 2002. They are now fully in effect and enforceable. For further information: http://pacer.cadc.uscourts.gov/common/opinions/200203/97-1440c.txt.*

2. On page three, there needs to be more explanation on how often does the responsible agency have to develop the Natural Events Action Plan? Would such a plan be necessary with each fire, each day, or when?

Response: *Thank you for pointing this out. Additional explanation has been provided.*

3. If the Natural Events Policy, (NEP), includes Seismic and Wind, which entity of government would be responsible for drawing up the Action Plan? In many of these events, as well as some large fires, there are a significant number of entities involved.

Response: *Same as for #2.*

4. The second paragraph on page 3 is perhaps one of the most important statements in the draft but it is quite confusing. Line 3, how do you plan on defining the "area"? Line 4, how and who will determine "the responsible agency"? And most importantly, the Policy in this paragraph needs to give some idea as to what the responsible agency is expected to do upon an "event".

Response: *Same as for #2.*

5. In regards to page 15, if EPA and DEQ really wish to make an effort to reduce the smoke and negative effects from smoke during fire season, the Plan should call for the land management agencies to take immediate and effective action on initial attack, to suppress all new fire starts whenever the air conditions are approaching a hazardous stage. This is my most important comment. It is large fires that affect the Ambient Air Quality. If the agencies priority is to suppress all new starts at a small stage, new large fires can be mostly avoided.

Response: Firefighter and public safety are the highest priorities in any fire management decision. In addition, federal land managers are charged to protect communities and natural resources from fire and to reverse the trend in the deteriorating health of our forest and rangeland ecosystems. When considering when and how to suppress a fire (i.e. a wildfire situation), land managers must consider information related to available personnel and resources, values (including air quality), communities at risk, fire behavior, topography, and weather to guide their actions. All these factors are also considered in wildland fire use and prescribed fire situations. However, these fires are used, wherever appropriate, as tools to meet resource management objectives. Resource management objectives could include fuel reduction, wildlife habitat improvement, soil nutrient recycling, etc. Air quality, especially then the air is "already approaching a hazardous stage" is also considered along with these other factors.*

** FY2001 Performance Report, National Fire Plan, USDA, USDI, February 2002, http://www.fireplan.gov/report_page.cfm*

6. Page 19 and *25* mention a list of Idaho communities that are at high risk from wildfire. I have not seen such a list but would like to have a copy.

Response: *A list was provided to your office.*

7. Page 20, 2nd paragraph, is this statement intended only after wildfire has moved through the area?

Response: *No, the funding covers projects to prevent wildfire as well as to rehabilitate areas that have been damaged by wildfire.*

8. Page 14, the NAAQS exceedance goal in the top paragraph, will be impossible to reach in bad fire years. Also, there will be more bad years in the future than there have been in the past at the present rate of large fire increases.

Response: *Agreed. This is a direct quote from EPA's policy and refers to Fire Management Plans that are developed by Federal Land Managers (not DEQ). It would seem right now to be a rather untenable goal, but as more efforts are made, we will at least get closer to the goal.*

9. In your draft, and in the elements as well as the "Notice of Availability—", it is

unclear as to who is to draw up the NEA plan. Is it the main agency that may have been responsible for putting ambient air over PM 10, or is it all agencies that may have a roll?

Response: *Same as for #2.*

Gary Jackson, Salmon-Challis National Forest

1. Good Documents and useful for everyone.

Response: Thank you.

1. Corrections: Appendix C - Page 3- Actions to Take when Smoke Is: Unhealthy for Sensitive Groups- (can see 2? to 3 miles). Looks like 22 miles. Must be 2. Unhealthy- (can see 13 or 1.3? to 2 miles). Must be 1. Hazardous- (can see: miles or less). Must be less than 1 mile.

Response: Corrections have been made.

Larry Lovitt, Payette National Forest

1. We found the numerous different descriptors (ie, indexes, categories, levels and stages) are somewhat confusing as to how each relates to the other or why there are several. We also noticed that the break points on the web page air quality categories don't match the ones in the NEAP on page12, it looks like they are both measuring 24 hour PM 2.5.

Response: *Table 4 was added to clarify the differences between the programs and rules, authorities, conditions, and actions. The website will be updated.*

2. The Air Quality Restriction Level table shows both PM_{10} and $PM_{2.5}$ as the 24 hour measurement. We would assume that the levels at which the alert or unhealthy level would be at the $PM_{2.5}$ of >65 ug/cu m. which would match the Air quality Categories on page 12 and the NAAQS for $PM_{2.5}$ exceedence and therefore the PM_{10} would be dropped or there would be another measurement level listed for PM_{10} with >150 ug/cu m as the unhealthy level?

Response: *Table 3 has been corrected.*

3. On page 15 there is a policy reference to the 2-hour decision space for WFU designation. The correct reference should be to the Wildland and Prescribed Fire Management Policy - Implementation Procedures Reference Guide.

Response: *Thank you, the citation has been corrected.*

4. There was a comment about the location of the TEOM in McCall which is on top of Shavers grocery store. We heard that the machine may have been impacted by delivery

trucks idling behind the building. If this is true the machine should be moved to a more representative location.

Response: *Idaho DEQ operates and maintains its ambient air quality monitoring network according to EPA and DEQ guidelines. The McCall $PM_{2.5}$ monitoring site was established to meet federal and state siting requirements for population exposure monitoring. The site was found to meet federal and state criteria, and to be representative of population exposure to pollutants from a variety of sources. Compliance with federal and state siting criteria ensures the impact of emissions from idling delivery trucks will not skew the representativeness of a community monitoring site.*

DEQ staff was informed by Shavers that delivery trucks are generally there in the morning between 7-9am. The monitor is located on the roof approximately 40-50 feet above the ground and at some distance from the loading dock. If the idling trucks were influencing the $PM_{2.5}$ concentrations, we would expect to see spikes in the data at those times. Looking at the data from 2001, no unusual spikes in $PM_{2.5}$ concentrations were observed. Rather, the expected normal "rise" during these hours due to traffic and people loading up their woodstoves in the morning was evident. Therefore, DEQ does not believe the McCall $PM_{2.5}$ monitoring site is being unduly influenced by emissions from idling delivery trucks at the grocery store. If the commentors have specific information regarding their concerns, DEQ will gladly re-evaluate the appropriateness of the site.

5. Does the NEAP imply that restrictions to new fire use events, as indicated under Restriction Levels 3, 4 and Stage 1, mean that they will be actively suppressed? Wildland fires often will not be suppressed regardless of the smoke management implications due to lack of suppression resources, safety concerns, wilderness values, etc. The NEAP should clarify that full suppression is not mandated but remains under the authority of the fire managers.

Response: *Clarification has been made in the text and Table 3.*